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## PAPERS AND POSTERS

**PANELS**

**A Case Study on the Impact of Violence on Sexual Health Behavior among Commercial Female Sex Workers in India**

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Background:
Sexual health behavior cannot be construed as a singularly individual attribute unaffected by surrounding contextual factors. In HIV/STI intervention programs among commercial sex workers the lack of correlation between sexual knowledge and sexual behavior has been noted repeatedly. A thorough understanding of the environmental and structural factors, such as economic deprivation, violence and stigmatization, is necessary for a successful implementation of a HIV/AIDS prevention program among commercial sex workers. Violence is one of the primary contextual factors that significantly raise sex workers' HIV/STI risk through being pressured by a client into unprotected sexual intercourse. The current study examines how violence affects sexual health behavior including condom compliance among commercial female sex workers in a red light district called Sonagachi in Kolkata, India. The study also discusses an innovative multilayered strategy devised by the sex workers to combat violence and successfully maintain safe sex practices.

Method:
Ethnographic research was used for this project along with structured and unstructured interviews and participant observation. The researcher spent a total of four months over a period of three years among commercial female sex workers in Sonagachi. Data was collected from 42 subjects. Prior permission was obtained from the central governing committee of the sex workers' union in Sonagachi before the commencement of any research work and interviewing. Institutional Review Board (IRB) research approval was also received.

Findings:
Violence serves as a contextual factor that impedes condom compliance and positive health behavior on part of sex workers. The current study results indicate that the women at Sonagachi have been subject to violence perpetrated by different sources including pimps, brothel owners, law enforcement agencies, local criminals and intimate partners. But the unionization of the sex workers resulted in a drastic reduction of violence perpetrated against the sex workers. An identification of stakeholders within and outside the realm of sex work, and engaging the stakeholders in dialogue, helped in generating empathy and significantly diminishing the incidence of violence. Unionization and stakeholder negotiation thus comprise a multilayered strategy to combat violence perpetrated against sex workers and resulted in a significantly increased condom compliance rate.

Conclusions and Implications:
The findings of the study indicate a need to reassess dominant theoretical and praxis-related notions on HIV/STI intervention research among sex workers and emphasize the need to include local cultural constructions in the sex worker community. There needs to be a focus on the contextualization of health behavior by structural determinants of health like violence. Violence is often interwoven in commercial sex trade, especially when it is rendered illegal by a country's legislative system. Ceaseless violence against sex workers, perpetrated by multiple sources, often precipitates condom failure, lack of condom compliance, mental morbidity, unwillingness to access health resources and a general deterioration of overall health of the sex workers. The current research contrarily shows that the sex workers can confront the system that delegitimizes, disempowers and victimizes them, and actively engage with it, in order to change their marginalized status and attain empowerment.

# A Communication Inequalities Approach to Disparities in Fruit and Vegetable Consumption

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This study assessed whether socioeconomic disparities in fruit and vegetable consumption and its differences by social capital (i.e., resources embedded within one's social networks) are accounted for by exposure to information about fruits and vegetables from mediated sources and elaborative processing of that information (i.e., reflective integration) and whether education and income are positively associated with social capital. Online survey data were collected in July 2014 from 572 U.S. adults from a nationally representative online panel (KnowledgePanel). Participants were asked to report, on average, how many servings of fruit/vegetables they ate or drank per day the week before. Responses ranged from less than one serving per day (0) to 5 or more servings per day (5). Reflective integration was measured by asking respondents on a 3-point scale (1 = not at all, 2 = 1 or 2 times, 3 = 3 times or more) how often they have done the following: for instance, "I tried to relate the information about fruits and vegetables that I learned from the media to my own personal experiences." Media exposure was measured by asking respondents to report on a 3-point scale (1 = not at all, 2 = 1 or 2 times, 3 = 3 times or more) how often they had actively looked for information about fruits and vegetables in the past 12 months and how often they had encountered information about fruits and vegetables when they were not actively looking for it. Position generator was used to measure social capital. Respondents were asked "Of your relatives, friends, and acquaintances, do you happen to know someone who is…" The list includes 22 occupations with different job prestige score. Education was measured by asking respondents to report their highest educational degree received, which ranged from 1 = no formal education to 14 = professional or doctorate degree. Income was measured using a 19-point scale (1 = less than $5,000 to 19 = 175,000 or more). Path analysis was employed to test our mediation models. The full path model achieved adequate fit for the data, $\chi^2(7) = 10.65$, $p > .05$, CFI = .99, TLI = .93, RMSEA = .03, 90% CI [.00 - .07], SRMR = .01. Both education and social capital were positively associated with media exposure, which was in turn positively related to reflective integration and finally led to fruit and vegetable consumption (education's indirect effect $\beta = .021$, $p = .011$; social capital's indirect effect $\beta = .018$, $p = .016$). In addition, both education and income were positively associated with social capital, which was in turn positively associated with media exposure and the subsequent reflective integration and finally led to fruit and vegetable consumption (education's indirect effect $\beta = .004$, $p = .036$; income's indirect effect $\beta = .003$, $p = .057$).

**A Content Analysis of Self-Disclosure and Social Support-Seeking Strategies Used and Responses in a Depression Help SubReddit**

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Interpersonal communication research has demonstrated that disclosing sensitive information can be an effective way to obtain social support from one's support network. However, despite these findings that indicate self-disclosure is a critical step on the road to recovery and diagnosis for individuals experiencing symptoms of mental illness, findings show that the stereotypes and prejudices associated with those types of symptoms are salient to these individuals, which decreases the likelihood and effectiveness of mental illness disclosures. This increased risk of vulnerability puts pressure on disclosure decisions considering who, how, and when to disclose sensitive information, if at all. Research in computer-mediated communication has demonstrated that the nature of the online context, such as the reduction of communicative clues, like anonymity, can increase levels of disclosure. Reddit is one social network where individuals can post or respond to content across different subReddit communities, and previous studies have analyzed posts and comments in different communities to investigate how individuals seek social support and encouragement, or for access to health-related information.

By taking an interactional approach, the current study utilized one specific subReddit community, r/Depression, to explore the impact that disclosure and support-seeking strategies used in initial posts have on responses and social support offered in comments. This community self-identifies as providing "peer support for anyone struggling with depression" and has over 500,000 subscribed users and ten moderators that filter the content to fit the rules posted on their home page. In order to analyze data from the subReddit to test hypotheses and explore research questions, a content analysis coding protocol was applied to a random sample of 250 initial posts and all of the comments directly responding to the initial posts. Two paid graduate research assistants categorized initial post units into self-disclosure and social-support-seeking strategies and comment units into interpersonal response strategies and the type of social support offered. The coding scheme was developed by the author, based on relevant disclosure, social support, health, interpersonal, and computer-mediated communication research. Content was unitized into thought units and analyzed at the unit-level and at the post- or comment-level.

Findings show that the majority of initial posts were indirect, and posts that used indirect disclosure and support-seeking strategies received more responses and more emotional social support than posts without indirect strategies. Initial posts with at least one direct disclosure strategy received informational social support more than posts without any direct disclosure strategies. Surprisingly, there was a statistically significant, negative association between direct disclosure strategies and confirming responses, contrary to what was hypothesized, posts with more direct disclosures received fewer confirming responses than posts with fewer direct disclosures. One possible explanation is the influence that the variance in content of the initial post disclosures might have on the responses offered in the comments. Implications discussed warrant future research in the investigation of the impact that self-disclosure and social support-seeking strategies have on the interpersonal responses and types of social support offered, especially in the context of discussions about experiencing symptoms of mental illness.

**A Cross-National Comparison Examining Major Determinants of Health Information Seeking Experiences in the U.S. and Germany**

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Health information seeking is essential for improving individuals' health empowerment, reducing health information inequalities, and promoting health (Johnson & Case, 2012; Kreps, 2008; 1988). Achieving important health goals requires access to high-quality health information and effective seeking experiences. To improve users' seeking experiences and successful information acquisition, determinants of problems experienced when searching for information need to be identified. It is known that social and health-related determinants are important factors that influence health information use and health self-efficacy (e.g. Sarkar et al., 2007; Niederdeppe, 2008). Moreover, national and cultural aspects can be important factors too. Cross-country comparisons revealing similarities and differences in health information access and use can help increase understanding about country-specific causes of information-related problems and help to identify strategies for reducing these problems (Kreps et al, 2017). Based on differences in the health care systems and prevalent health and social inequalities, we focus on comparisons between the U.S. and Germany (Jürges, 2006). The aim of this study is to explore how social and health-related determinants are linked to problems with health information seeking in these two countries.

To answer this research question the study compares data from the first wave of HINTS Germany (n=2,902; telephone survey, 2018) with HINTS U.S. data gathered from HINTS 5, Cycle 1 (n=3,285, mail survey, 2017). We used these data to predict the amount of problems respondents experienced during their last search for health information (Arora et al., 2007). Predictor variables related to social determinants include sex, age, socioeconomic status (SES) and migration background. Health-related determinants were measured by self-reported health status, Patient Health Questionnaire (PHQ-4), health-related self-efficacy and satisfaction with the quality of health care. We conducted separate block-wise multiple linear regression models using Jackknife estimates of variance in the U.S. and in Germany and compared the results.

The findings show markedly different effects of social determinants in the cross-country comparison. In the U.S., social determinants seem to play a minor role for the respondents' perceived problems in information seeking. In Germany, higher SES is associated with fewer problems, while respondents with a migration background and male respondents reported more problems while searching for health information. With regard to health-related factors, we find similar influencing patterns for both countries. Whereas self-reported health status is not a significant predictor, higher scores on the PHQ4-scale and lower satisfaction with the quality of care increase information-related problems. Overall, the model explains 11.3% of the total variance of the amount of problems experienced by respondents during their last search for health information for the U.S. and 10.3% of the variance for Germany.

The findings underline similarities and differences between the countries and the importance of taking social and health-related determinants into account when explaining information-related problems. Further the results reveal the need to enhance health information seeking skills in specific target groups. However, some limitations like slightly different measures or different modes of data collection need to be considered. Implications from these findings are explored for guiding development of health promotion interventions in both countries.

**A Culture-Centered Exploration of Community Members' Response to an Ebola Outbreak.**

*Esi Thompson, Indiana University*

Background: Initial reports about the West African Ebola outbreak portrayed community members as ignorant, illiterate, and primitive. But the persistence of the on-going outbreak in the Democratic Republic of Congo suggests the need to understand the narratives of community members in response to disease outbreaks. Scholars have argued that health decision-making and response occurs within complex social structures that influence how people make sense of disease and what behaviors they enact guided by the material challenges in their lived realities. If infectious disease outbreaks can be counted on to occur in sub-Saharan contexts (Fenollar and Mediannikov, 2018), then understanding how community members made sense of the Ebola outbreak is worthy of investigation.

Purpose and relevance: The purpose of this paper was to explore Liberian community members' interpretations of the Ebola outbreak as people who have lived through a deadly outbreak. I argue that differing community member responses reflect their differing and changing agency in addressing a novel outbreak and to sustain life within existing cultural and structural mechanisms. The study is meant to provide a conduit for grounding local interpretive frames within mainstream discourse about responses to disease outbreaks. The focus of this article is in reconstructing the response of community member in disease outbreaks to show how these reflect their agency and quest for survival and life sustenance.

Literature /theoretical underpinning: The study draws on culture-centered approach (Dutta, 2008; Sastry & Dutta, 2017) to analyze the narratives of community members to draw out culture, structure and agency and how these influenced the meanings of and responses to the Ebola outbreak in Liberia.

Methods: This exploratory study adopted a qualitative approach with three semi-structured focus group discussions of 10 participants each and 10 semi-structured in-depth interviews with community leaders in the Mamba Kabah district in Margibi County of Liberia. Multi-stage cluster sampling was used in selecting respondents from communities and towns within Dolotown health catchment area and the Unification Town health catchment area.

Findings: The study found that community members expressed their agency in the face of the Ebola outbreak in various ways including through the use of historical knowledge and experience, religious and spiritual rituals, and cultural and social organizing structures. These were expressed differently over the course of the outbreak. Though some of these forms of agency may be viewed as resistance, community members adopted negotiated and oppositional meanings in an effort to make sense of the outbreak in their daily lives.

Implications: The study highlights the need for health communication about epidemics to be mainstreamed into efforts to address health inequities and improved health systems. It also emphasizes the importance of understanding how religion and culture feature in the health seeking needs and behaviors of community members confronted with a novel outbreak. Finally, the study shows that marginalized communities have agency, existing structures, and knowledge economies about culture and health that need to be harnessed for health communication.

**A Descriptive Analysis of Health Influencer Videos on YouTube in the Ostomy Community**

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The expansion of YouTube into the mainstream media and its place as the second most-used website in the world makes it a prime place for health information seeking. However, content can be created and uploaded by anyone and thus, the threat of misinformation on YouTube is high. Although medical researchers have established that YouTube videos can promote accurate information, videos by non-professionals promote generally inaccurate or misleading information. Yet, these videos often receive more views and higher relevance rankings on YouTube. To better understand this phenomenon, a descriptive study was used. The study focused on videos created by non-health professionals in the Ostomy community. The goal of this study was to thoroughly describe the innate features of the videos using media richness theory, and to describe social support and illness narrative using the framework of social presence theory.

This study analyzed videos from 39 unique channels (N= 50), the majority of the video creators were female (64%) and primarily White (88%). The number of views ranged from 19 to 2,452,050 (M= 145,253.40, SD= 385,848.73). Research question one aimed to describe the features contained within the videos (i.e., number of text insertions, images, video clips, music, and props), participants made frequent use of props (M= 4.44, SD= 4.97) and images (M= 4.82, SD= 15.24) within their video. Research question two, three, and six examined relationships related to user engagement (i.e., averaging views, likes, and comments into a single variable). A two-tailed Pearson correlation showed that the relationship between the number of features present in a video and user engagement was not significant ($r = -0.022$, $p = 0.880$). Therefore, the number of features present in a video is not significantly related to user engagement. Research question 3 asked if there was a relationship between engagement and video production quality. A two-tailed Pearson correlation showed a significant positive relationship between these variables ($r = 0.357$, $p = 0.011$). Therefore, the production quality is significantly related to user engagement. Research question four assessed the amount of social support present within the ostomy videos. Three types of social support were measured: informational, emotional, and instrumental. Given that a driving assumption in this study was that YouTube is a source of health information, it was unsurprising that informational support was the most common type of support, present in 88% of the videos (n = 44). Finally, research question five and six explained questions about illness narrative. Using Frank's illness typologies, restitution narratives were most frequent (n= 14, 28%); however, 40% of the videos did not contain a narrative at all. Finally, research question six asked if there were differences between types of narratives and user engagement. A one-way ANOVA showed no significant effect of narrative on engagement ($F(3, 46) = 1.44$, $p = 0.242$). Overall, these results provide a deep description into this particular community of non-professional health influencers and pave the way for more work.

# A mHealth App May Help Improve Family Conflict and Type 1 Diabetes Management for Parents Caring for their Child

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Type 1 diabetes (T1D) is typically diagnosed in childhood. Due to the young age of the child at the time of diagnosis, parents typically take on the complex daily management of the disease. As the child matures, there is a transition from parent-management to parent-adolescent-team management. This is stressful and associated with a decrease in adherence to management and an increase in family conflict. Improving adherence and communication during this transition may be possible through the use of technology. Mobile phone health apps (mHealth) allow for the use of more engaging strategies, such as gamification and customization, which have been shown to improve adherence and reduce conflict. We have developed a mHealth intervention to help families during this time of transition. This study tested a mHealth intervention's efficacy in reducing family conflict and improving adherence for parents of children with T1D.

Methods

Forty-nine adolescent-parent pairs were enrolled in a 12-week study and randomized using a 2:1 ratio to the intervention (I:mHealth app) or control group (C:standard care). While adolescents were included, the main focus of this study are the parents. Participants in the intervention group were provided with the mHealth intervention. The control group was instructed to continue with usual care. Pre-test survey measures were collected and at the conclusion of the intervention, post-test surveys were conducted. Survey measures included conflict and diabetes adherence. Paired-sample t-tests and ANOVAs were conducted to assess differences from pre- to post-study and between-subjects.

Results

The final analysis included 33 families (23I:10C); 10 never completed post-test assessments (8I:2C). For both groups the majority of the participants were White (90%I:96%C) and the biological mothers of adolescents (82%I:80%C). The mean age of the adolescents was $12.5\pm1.45$ years old.

The intervention group showed significant improvement in adherence (pre:M=3.67, SD=0.45; post:M=3.89, SD=0.44; $t(19)=-2.431, p=.03$) compared to the control group who had a non-significant decrease in adherence scores (pre:M=3.90,SD=0.58; post:M=3.75,SD=0.54; $t(7)=1.54, p=0.17$). However, there was no significant difference between groups at post-test, $[F(1, 32)=1.23, p=0.28]$.

The intervention group had a decrease in conflict (pre:M=2.62,SD=0.38; post:M=2.61,SD=0.42; $t(20)=.104, p=.92$) and the control group also had a decrease in conflict (pre:M=2.61,SD=0.23; post:M=2.36,SD=0.57; $t(8)=1.54, p=0.16$), although neither were significant. There was no significant difference between groups at post-test $[F(1, 32)=2.75, p=0.11]$.

Conclusions

This study provides some preliminary support for the efficacy of this intervention in improving health outcomes in adolescents with T1D. mHealth interventions developed to improve the management of T1D during the transition to adolescent self-care is a promising approach to improve health outcomes in this population.

# A Qualitative Study Examining Children's Everyday Health Management Using Health Technologies

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Type 1 diabetes (T1D) is one of the most common chronic diseases for children in the United States. Once diagnosed, the family must manage the disease. This complex management routine includes multiple daily blood glucose monitoring, administering insulin, calculating carbs consumed, and tracking physical activity. Recent health technologies, like mobile phone health applications (mHealth apps), have become useful tools to support this health monitoring, particularly for children. However, previous studies have demonstrated significant barriers in monitoring health information, particularly when children are at school. This is due to the school phone policies and activities that happen outside of their routine. Therefore, it is necessary to understand the children's attitudes, behaviors, and opinions towards using mHealth interventions in their daily life and incorporating those findings into future design features.

To do this, we conducted semi-structured video interviews with children with T1D. We provided (via their parents' email) the children with a narrative about a child managing T1D at school and several drawing forms to have them draw perceived barriers and opportunities. We also asked them to draw an mHealth intervention that would help them manage their T1D. Data collection took place between September and October 2019. The interviews were conducted with children aged 10–15 years (n=10) with T1D. Although our primary focus was to understand children's perspectives, parents were able to participate in the conversation, if they wanted. Each interview lasted approximately 45 minutes. All interviews were audio-recorded and professionally transcribed verbatim. Overarching themes were identified through open coding and affinity diagraming, and were regularly discussed in group meetings.

Our results demonstrate the children believe that there are benefits and challenges of using monitoring technologies and mHealth apps that automatically track blood glucose values and can share information with their parents. We identified four overarching themes, including: (1) children as an active participant of diabetes management with technologies. This theme shows that the children feel ownership over the management routine of their disease. (2) Children develop their own interpersonal communication strategies as they go through the illness journey. For instance, they communicate through a heavy use of emojis. (3) Children are fast learners of new technologies. They actively seek out peripheral devices to communicate with their parents about their diabetes including conversational agents, like Alexa and Siri. (4) They have emerging fears of security and privacy issues of using technology. For example, one participant was worried about health information being "out there" if they lost their phone.

While technology is not a panacea for T1D management, we can develop better technologies through using this type of human centered design. By capturing the emerging themes in monitoring health data with technologies from the children's perspective, we will discuss design implications to develop supporting interventions for children with T1D. Further, we will also review the benefits of using a narrative-based approach with this population and in other health contexts.

**#AbortionChangesYou: A Case Study to Examine the Communicative Tensions in Women's Medication Abortion Narratives**

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One out of four women will undergo an abortion procedure in the United States by age 45. While abortion rates are steadily declining in the United States, the rate of medication abortions continues to increase. In 2000, the U.S. Food and Drug Administration approved mifepristone to be used in combination with misoprostol as a form of medication abortion, and since then, the annual number of medication abortions has risen steadily. Currently, over one-third of all abortions in the U.S. are medication abortions (Guttmacher Institute, 2019). Between 2014-2017, the number of medication abortions provided at facilities other than hospitals increased by 25% (Jones, Witwer, & Jerman, 2019). In addition, the 2016 FDA protocol update expanded provider eligibility for dispensing mifepristone to women. Thus, abortion provision is transitioning from formalized medical procedures conducted in health care settings to a protocol in which most of the abortion process occurs individually at home with limited assistance from a clinician (Biggs, Ralph, Raifman, Foster, & Grossman, 2019). Given these significant changes to abortion provision, more research is needed to examine the distinct experiences of women who have undergone this type of abortion. Our study is one of the first to analyze women's unsolicited blogging narratives after having had a medication abortion.

Method & Findings

Using relational dialectics theory as a framework, we conducted a case study of the nonpartisan website, Abortion Changes You. We were interested in understanding the topics women disclosed to the "generalized other," and what "if any" sites of struggle characterize the communication within women's online blog post. Our contrapuntal analysis rendered four primary sites of dialectical tension found across the 98 different blog posts: only choice vs. other alternatives, unprepared vs. knowledgeable, relief vs. regret, and silence vs. openness. Each site of struggle characterized a different noteworthy moment within a women's medication abortion experience: the decision, the medication abortion process, post-abortion identity, and managing the stigmatizing silence before and after the abortion.

Theoretical & Practical Implications

Our findings show that the abortion experience is ripe with communicative tension and less of an absolute.

This complexity and duality is not evident in much of the centripetal cultural discourses about abortion. Many women in this case study noted that their decision to have a medication abortion was not a flippant decision or an easy choice where women remained unscathed. Women's narratives about their medication abortion experiences were more complex, and no singular narrative fully encapsulates or defines a women's medication abortion experience during or post-abortion. Therefore, it is critical to transcend the shouting and silence alike in order to expose both sides of the debate and understand how these larger discourses influence women's personal language choices when constructing their own abortion narrative and putting their experience into words. The dialectical struggles with having a more private medication abortion and talking openly about it afterwards remain silent from current public discourse and debate (Hallgarten, 2018).

# Agency and Re-Humanization in Digital Stories About Drug Use: A Community-Based Pilot Project

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Harm reduction is a philosophy and a set of public health interventions and practical tools that minimize risk from drug use. Harm reduction services include sterile syringe access and overdose prevention via naloxone distribution to people who use drugs. However, stigma toward people who use drugs prevents the widespread adoption of harm reduction in the U.S.. This pilot project empowered people involved with a local harm reduction organization to tell meaningful personal stories about drug use. In the long term, helping those with experience of drug use share their stories could reduce stigma and promote support for humane drug policy.

Over several months, an interdisciplinary team ran two 2-day digital storytelling workshops. The 15 storytellers were organization staff or volunteers, in recovery from drug use, or currently using drugs. The process was observed by an ethnographic notetaker, and group conversations were transcribed and analyzed.

In preliminary analysis, we identified two main themes: claiming agency over complicated stories and stories as agents of de-humanization and re-humanization. Storytellers relayed how the only spaces for story sharing about drug use were in settings that constrained how stories would be told. One storyteller who'd been through drug court said the story he told about the absurdity of the process would never have been allowed there. Sanctioned stories instead centered judges or other officials as heroes and saviors. Several storytellers agreed that life stories in 12-step spaces required adherence to a strict recovery arc in which people were labeled as clean or dirty with no room for ambiguity. One storyteller pushed back when the two participants before her shared similar narratives of stability after recovery. By questioning the process, she insisted on space for her own story, as someone whose life had not resolved with a happy ending.

Storytellers shared how they felt people who use drugs were dehumanized in the media, in medicine, and among policymakers. Some stories created for the workshop documented de-humanization directly. One story about unsuccessful attempts to reverse an overdose ended with police officers celebrating the arrest of the woman who'd called 911. Other stories contributed to re-humanization. Storytellers talked about fundamental and shared human concerns, like loving your family or helping others, that serve as points of connection in the life stories of people who use drugs and people who don't. Several storytellers said their stories should be shared more broadly so that, as one storyteller said, people who use drugs might be seen as human.

In sum, this pilot project allowed participants to reclaim power over narratives by telling stories that they wanted to tell and in the way they wanted to tell them. By complicating the stereotypes of people who use drugs, these stories have the potential to build support for harm reduction practices aimed at meeting people where they are and keeping them alive. Future work will explore how digital storytelling might be used to produce stories that address harm reduction policy priorities, and how digital stories might influence stigmatizing beliefs about people who use drugs.

# An Examination of Teenagers' Beliefs Towards Organ Donor Registration

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More than 112,000 Americans are currently awaiting a lifesaving organ transplant (United Network for Organ Sharing, 2019). Despite large public support (95%) for organ donation (Gallup, 2013), only about half (54%) of U.S. adults are registered organ donors (Donate Life America, 2017). One group with particularly low registration rates are young adults (Feeley, Reynolds-Tylus, Anker, & Evans, 2014).

The current investigation seeks to better understand teenagers' organ donation beliefs. Research on teenagers' organ donation beliefs is limited. Extant research shows that teenagers have positive attitudes towards organ donation (Quick, LaVoie, Scott, Bosch, & Morgan, 2012), but relatively low knowledge on the topic (Sirios, Sears, & Marhefka, 2005). Furthermore, teenagers are unaware of the need for organ donation (Quick et al., 2012), and believe many myths/misconceptions (Quick et al., 2012; Sirios, 2005).

Method: Participants (N = 466) ranging in age from 13-19 (M = 15.41, SD = 0.79) were recruited from driver's education schools in Ohio (n = 259) and Michigan (n = 207). Participants were mostly White (65.9%) and female (61.8%). Few were registered organ donors (22.2%).

Participants completed a survey on their beliefs about why people do and do not register as organ donors. Two undergraduate coders were trained on a coding scheme developed by the first two authors. Acceptable intercoder reliability was reached for both 'reasons why' (Cohen's kappa = .85) and 'reasons why not' (Cohen's kappa = .91).

Results: The most commonly perceived reasons for registering were prosocial benefit (42.6%, "Help other people"), rational argument (14.5%, "You don't need organs when you die"), personal experience (10.0%, "May have known someone whose life was saved"), and the belief that donors are good people (8.2%, "Because they believe in helping other"). Additional reasons included personal benefits (5.9%), scientific benefits (3.6%), social influence/norm (3.4%), reciprocity (2.0%), living on through others (1.7%), religious reasons (1.6%), and other (6.7%).

The most commonly perceived reasons for not registering were bodily integrity (17.4%, "They want their whole body together when they die"), religious reasons (14.5%, "It is against their faith"), no desire/negative beliefs (12.1%, "Not interested"), and general fears (9.4%, "Scared to donate their organs"). Additional reasons included lack of awareness (7.7%), perceived disqualification (7.0%), disgust (6.7%), the belief that nondonors are bad people (6.4%), perceived personal risks/costs (5.8%), perceived family disagreement (3.3%), medical mistrust (2.4%), and other (7.3%).

Discussion: The current study aligns and contrasts with past qualitative work on organ donation beliefs in adult samples (Feeley et al., 2014; Reynolds-Tylus, Quick, King, & Moore, 2019). In line with previous work, our results revealed the three most common reasons for registering were prosocial benefits, rational argument, and personal experience. In contrast to previous work (Feeley et al., 2014; Reynolds-Tylus et al., 2019), the two most common reasons for not registering were concerns about bodily integrity and religious reasons. The current study also identified several novel beliefs among teenagers that support donation (donors are good people, scientific benefits, personal benefits, living on through others) and that are non-supportive (nondonors are bad people, personal risk/cost).

**An Interdisciplinary Approach to Social Support: Advocacy Support and Health Disparities**

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Due to inherent disadvantages in social, economic, and/or environmental resources, vulnerable populations need advocates. This project explores the concept of advocacy support, focusing on the interpersonal relationships within advocacy support enacted within and outside of clinical settings, across relationship types, and as it relates to health disparities. There is a wealth of research which highlights individuals' desired and received support, as well as the discrepancies which exist between desired and experienced support, and the relational and outcomes associated with unmet support needs (MacGeorge et al., 2011). Likewise, research consistently shows that social support affects, and is affected by health (Rains et al., 2015).

In this interdisciplinary project, we extend the concept of a type of clinical support articulated in other disciplines (e.g., social work, nursing), advocacy support, to communication. We describe how advocacy support relates to information management theory, particularly, the concept of co-authorization in communication privacy management theory. Accessing support through an authorized co-owner is characterized by an interaction between two individuals (support provider, support recipient) that precedes a subsequent interaction where the support provider then communicates with a third party (individual or group) to enact support. All types of support (informational, emotional, esteem, network, tangible) share a common feature of one person providing support to another individual. Advocacy support relates to other types support (e.g., informational) but extends the provider → receiver model, to a provider → third party → receiver model.

Thus, advocacy support is a collaborative process where the provider supports the receiver by speaking or acting on their behalf, often in circumstances where the receiver does not have the power, information, efficacy, and/or communication skills to communicate on their own behalf. The goal of this communicative act of advocacy is to provide another type of support (e.g., tangible, esteem, information) that is enacted through a third party. Advocacy support is not relevant in all cases where other forms of support may be common, as advocacy support would most often be present in situations characterized by a power differential (e.g., related to social stratification, such as race, occupation, institutionalization). That is, people seeking/needing advocacy support are lacking the agency, and/or efficacy to navigate their support needs on their own.

Access to support almost always necessitates disclosure (Child & Starcher, in press), and in many cases where advocacy support would be relevant, disclosure of stigmatizing information. Our construction of advocacy support is contextualized in the context of communication privacy management. The full paper articulates advocacy support and how it is described in other disciplines, then explains how advocacy support manifests in the communication process, the role of information co-owners, the intersections between authorized and unauthorized information co-owners, and clarifies the authorization process. We present an evidence-based measure (!!! .91) developed by our interdisciplinary team, that was refined through cognitive interviews with members of two distinct populations experiencing ongoing stressors, and chronic uncertainty: people transitioning out of homelessness and parents of children with complex chronic medical conditions, and pilot tested with a sample of 75 undergraduate students.

**Analyzing the Relationship of the Subjective Norms and Culture in Family Discussion of Blood Donation: The Case of Russia**

*Maria Mordvinova, National Research University Higher School of Economics (Moscow)*

Family discussion is an important communication process for studying, which helps to attract new blood donors. Subjective norms are regarded as a set of collectivist rules related to culture. The article considers the features of blood donation discussion between parents and young adults in Russia based on the cultural construct of individualism-collectivism (IC).

The framework of the culture-centered approach and the concept of IC guided the research. It is known that in countries like Russia where collectivism predominates, the role of the family is the highest, and the opinion of parents is of great importance for children. Thus, a research question was posed: «What is the role of subjective norms (perception of a parental attitude) related to blood donation in realm of IC for Russian young adults?»

I carried out 35 semi-structured interviews with students-nondonors of HSE (Moscow, Russia) at the age of 18 to 21 years old. The direct quality content analysis was applied. The attributes of IC were used as a code frame: (a) how individuals perceive themselves, (b) how they relate to others, (c) the goals they follow, (d) what concerns drive their behavior.

As for the first attribute, the young adults mostly perceived themselves as independent of their parents' opinions (individualism). Meanwhile, collectivism was reflected in the opinions that parents are the only ones with whom they can and should discuss health issues.

Regarding the second attribute, an individualistic position prevailed among students that demonstrated a rational approach to the donation process. Students noted that a discussion within the family is inappropriate if there are no benefit-based reasons for this (no evidence of a need for blood, payment for donation, etc.). Relational and socio-emotional concerns as a common trigger for regular donation was not ubiquitous among the informants. Many of them spoke of a low empathy level and noted the inadequacy of the conditions for feeling compassion, which was caused by impersonality of help recipient.

The third attribute is reflected in the students' discourse about a non-conformist position regarding the decision to become a blood donor. Informants noted that if they wanted to become donors, then they acted against the will of parents. Meanwhile, there were those who had the goals compatible with the group, which was manifested in the desire to bring a friend along to blood donation.

According to the fourth attribute, the preponderant opinion was that talking with parents was not a necessary condition for making a decision on becoming a blood donor, which was based on their personal attitudes. The influence of norms, and hence collectivism, reflected only the perception of donation by some students as a heroic act.

The research gives understanding of what subjective norms are and the ways in which they are tied with willingness of blood donation of cultural members. The research provided a grounding to planning health communication campaigns and suggest that they should be localized and targeted in accordance with the region and audience, and the established opinion about Russia as a collectivist country is no longer universal.

**Appealing to Guilt to Promote Organ Donation Registration: A Preliminary Investigation of Reparative and Hedonic Efficacy Appeals**

*Christofer Skurka, Penn State University*
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In the United States, there are currently over 113,000 people awaiting a life-saving organ transplant (United Network for Organ Sharing, 2019), yet only 54% of U.S. adults are registered donors (Donate Life America, 2017). To motivate non-donors to register, health communicators have often turned to guilt appeals, given that guilt is associated with prosocial tendencies (Baumeister et al., 1994). Guilt appeals typically follow a two-component structure: a first component designed to evoke guilt and a second component to promote efficacy (O'Keefe, 2002). Specifically, guilt appeals should benefit from cues about how one can atone for one's wrongdoing (Dillard & Nabi, 2006)—a term we introduce called "reparative efficacy." Alternatively, guilt's prosocial tendencies may be driven not by a desire to repair the wrongdoing but a desire to alleviate one's negative emotional state (Boster et al., 1999)—a prediction grounded in the negative state relief model (Cialdini et al., 1973). We refer this type of efficacy as "hedonic efficacy." Communication researchers have yet to compare whether these two types of efficacy appeals might enhance the persuasiveness of a guilt appeal, so we explored non-organ donors' reactions to narrative guilt appeals when combined with various efficacy cues.

In a between-subjects experiment, undergraduate participants (N = 244 non-donors) read a fictional narrative about a woman in need of a heart transplant. The experiment followed a 2 (helplessness narrative: high vs. low) × 4 (efficacy appeal: self-efficacy only vs. self-efficacy/reparative efficacy vs. self-efficacy/hedonic efficacy vs. no efficacy) + 1 (offset control) design. To evoke varying levels of guilt, we manipulated helplessness by portraying the protagonist as a single mom struggling to get by (high helplessness) or as a mom fortunate to have her husband's help (low helplessness). The narrative was followed by (1) a self-efficacy appeal ("It is easy to register"), (2) a self-efficacy appeal along with reparative efficacy language (e.g., "Registering…[can] help those on the waiting list"), (3) a self-efficacy appeal along with hedonic efficacy language (e.g., "Registering…[can] make yourself feel better"), or (4) no efficacy cues ("Sign up today"). Participants in the offset control group did not read any messages.

Analyses indicated that the high helplessness narrative produced greater empathy and identification with the characters (but not more guilt) than the low version. Relative to the no-efficacy condition, only the self/hedonic appeal increased intentions to register as an organ donor. This main effect was qualified by a two-way interaction; the self/hedonic appeal promoted intentions (vs. no-efficacy) but only among participants reading the high helplessness narrative.

These preliminary findings point to the potential for hedonic, "feel-good" messaging to encourage nondonors to register. Though our narrative manipulation did not influence feelings of guilt, interestingly, our results suggest that the persuasiveness of an empathy-arousing narrative may be greatest when accompanied not by reparative efficacy cues (i.e., how taking action will help the person in need) but by hedonic efficacy cues (i.e., how taking action will improve one's mood). Implications for persuasive message design and empathic decision-makers' judgments are discussed.

**Applying Intersectionality to Address Social Contextual Influence on Health Behavior related to PrEP for HIV prevention**

*Yangsun Hong, University of New Mexico*

A majority of research in health communication focuses on studying personalistic, cognitive, and motivational precursors of health behavior (Dutta-Bergman, 2005; Lupton, 1994; Viswanath & Emmons, 2006). However, health is not only shaped by agency such as efficacy and lifestyle choices, but it is also influenced by the social, structural factors (Cockerham, 2005; Rütten & Gelius, 2011). Health behaviors are constrained or facilitated by structural environment, which creates social contexts and life experiences that may make health prevention too expensive, difficult, or impossible to reach for some groups of people – but not for other groups – by limiting experiences, supportive context, access to resources, and knowledge. Health behavior should be understood in consideration of the social context where health inequalities are produced and reproduced (Emmons, 2000; Frohlich & Potvin, 2010).

This study argues that health communication would magnify the effectiveness if it pays attention to social-structural context particularly when studying health of minorities. Intersectionality (Crenshaw, 1991) offers a useful framework that addresses the ways in which intersecting systems of oppression and power produce health inequalities for people with marginalized positions (Bowleg, 2008). Considering intersectionality as a framework, this study proposes the social process model of health behavior that demonstrates social contextual processes in which individuals with intersectional marginalization are disempowered in ways that matter to their health behavior.

This interdisciplinary study aims to propose and test the mechanisms through which individuals' social locations influence their health behavior by constructing social context related to health behavior. Based on theoretical integration of models in multiple disciplines, I specify and test a multilevel health behavior model in the context of a new HIV prevention method (i.e., PrEP) for women with HIV risk. The social process model of health behavior focuses on how disadvantaged social experiences of groups with multiple marginalization, in terms of race, gender, and socioeconomic status, influence social contextual and psychosocial predictors of health behavior. The model also explores how state-level structural support influences the mechanisms.

I surveyed low income Black women living in Washington, D.C. and Atlanta, and found that experiences of discrimination as an upstream societal factor constrains chances to build and maintain social contextual opportunities to have social connections to communicate health information, to have trust in medical services, and obtain social support. Thus, experience of discrimination links one's marginalized social positioning and their social contextual conditions that affect adoption of health behavior. Moreover, state-level policy support for marginalized groups (i.e., Washington, D.C., vs Atlanta, GA) contributes to social contextual factors and psychosocial predictors of behavioral intention for PrEP information seeking.

This study identifies that social contextual factors, which can be modified by health communication intervention to promote health behavior. This study found that talking about health with others positively affects PrEP awareness, perceived norms about PrEP uptake, and self-efficacy, which are predictors of behavior. Based on these findings, this study proposes a strategy for social-structural intervention that reduces social barriers, such as lack of awareness and negative social norms.

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**Applying the UTAUT to Explore Initial Perceptions of a Mobile App for College Students' Mental Health**

*Katharine M. Mitchell, Michigan State University*
*Bree E. Holtz, Michigan State University*
*Alexis McCarroll, Michigan State University*

Almost half of college students indicate they have felt so depressed or anxious that it is difficult to function. However, rates of receiving treatment are much lower than the prevalence of mental health issues on college campuses. Research has suggested that there are many potential barriers for college students in seeking help for mental health including a lack of time, cost, and stigma. Creative ways for reducing barriers for college students to receive mental health help is critical to decrease the negative outcomes and ultimately improve their quality of life. Mobile health (mHealth) interventions have the potential to promote improvements in mental health and aid students in seeking care. The MySSP app has been deployed in a midwestern university to provide live, 24/7 counselor-based help through chat, video, and/or voice to it's students. Therefore, it is critical to understand what makes a technology acceptable in this context.

The unified theory of acceptance and use of technology (UTAUT) has been used to determine user acceptance of various technologies and is an effective framework for understanding college students' perceptions of and intentions to use the MySSP app. There are four key constructs in the UTAUT that predict behavioral intention to use a technology. Performance expectancy is the degree to which an individual believes the purpose of the technology will help them achieve their goals. Effort expectancy is the degree to which an individual feels the system is easy to use. Social influence is the degree to which an individual perceives that others who are important to them believe that they should use the technology. Facilitating conditions is the degree to which an individual believes the technology is designed to remove barriers to use.

Objective. This study examines the relationships between the variables in the UTAUT framework, as well as depression and anxiety to determine if they predict college students' intention to use the MySSP app.

Methods. An online survey was conducted with 184 college students. Individuals had to be students at the university and older than 18 years to participate. The survey variables included the UTAUT (performance expectancy, effort expectancy, social influence, and facilitating conditions) as independent variables; depression and anxiety as moderating variables; and behavioral intention as the dependent variable.

Results. Results suggest that performance expectancy ($t = 4.13$, $p < .001$) and facilitating conditions ($t=2.48$, $p=.04$) were significant predictors of behavioral intention. However, effort expectancy and social influence were not. Furthermore, depression and anxiety did not moderate any of the relationships between the independent variables and behavioral intention.

Conclusion. This study provides an initial exploration of college students' intentions to use MySSP for mental health. Results show some support for the use of UTAUT, specifically performance expectancy and facilitating conditions. Participants indicated that they would download and use the app to receive mental health treatment. Additionally, having the necessary resources to use MySSP is a predictor of behavioral intention. Research should continue to explore innovative tools for college students' mental health.

**Asian American Health Values and Family Communication in Context of Chronic Hepatitis B**

*Dilnora Azimova, Michigan State University*

This presentation offers a discussion of the preliminary results of a study that seeks to understand the lived experiences of Asian Americans with chronic hepatitis B virus (HBV) and their family members, who provide care and support. More specifically, the study seeks to understand the ways, in which Asian American patients and their family members perceive illness in light of family communication, seek and apply hepatitis B information, and interact with social environments. Chronic hepatitis B has disproportionately affected Asian American populations in Michigan where the study is being conducted, and research efforts have highlighted the significance of the role of families in engaging affected members in treatment for chronic hepatitis B. Asian Americans make up 3.1% of the state population and have the highest rate (51.90% per 100,000) of chronic hepatitis B infection, compared to the state average of 10.93% (Michigan Department of Health and Human Services, 2018). Given the risk of intrafamilial transmission of chronic hepatitis B infection (Hurie, Mast & Davis, 1992), family-centered care appears as a promising perspective to consider in scaling up screening, vaccination, and treatment among foreign-born and at-risk communities. In fact, no other studies have explored how families talk about health in the home and the effects these conversations have on health outcomes of individuals, specifically in the context of chronic hepatitis B. Using the grounded theory, the study examines the factors influencing patient-family conversations about management of chronic hepatitis B, and how this communication works in concert with treatment and information offered by their physicians. The methods of this study are engagement with 20 chronic hepatitis B patients and primary caregivers in their families for in-depth, semi-structured interviews. The interviews are conducted with patients and family members separately. Additionally, the study involves observation of family member patient-provider communication during medical visits at a local community health center. Findings are expected to provide health communication professionals and providers with some guidelines on the value and need for family-based communication interventions that leverage the specifics of an Asian-American sub-culture within the United States.

**Assessing Communication Effectiveness in Interprofessional Healthcare Teams**

*Kelsey Binion, Indiana University - Purdue University Indianapolis*

In clinical encounters, healthcare decision-making is more than a cognitive process; it is also a communicative process defined by the relationships and interactions developed between providers and patients. Further, with the American healthcare system in a fragmented and uncoordinated system, interprofessional collaborative practice and team-based care has been identified as integral components of healthcare reform to impact patient-centered care. Interprofessional education and practice is a collaborative approach in equipping health professional students with the skills to become effective team members to improve patient outcomes. Thus, health professional students participate in interprofessional events, like simulations, to allow them an opportunity to practice challenging conversations with one another and patients to improve their communication skills.

This research study used a quantitative approach to identify communication behaviors that influence healthcare teams' effectiveness. Two-hundred and twenty-two students participated in an interprofessional simulation at a Midwestern university. Ninety-two standardized patients assessed the students' communication skills and their ability to collaborate as a team. The study had two research questions: (1) Do standardized patients perceive the students to communicate with the patient collaboratively instead of individually?; and, (2) How effective is the team's communication from the first encounter to the second encounter?

Students participated in a two-hour simulation, in which they were presented a case and developed a care plan for the patient, who was a standardized patient (SP). The SP assessed the students using the CARE Patient Feedback form (Mercer, Maxwell, Heaney, & Watts, 2004), which includes 10 Likert-type questions (e.g., patient's comfort level, communication, feeling of care and compassion) to understand the therapeutic relationship within the consultation. Data analysis was completed on 92 forms.

The results for the first research question found there was a 25% increase in teams functioning and performing collaboratively rather than individually. Working independently, while in a team environment, decreased by 57%. SPs often used words like "teamwork," "worked well together," and "group effort" to describe the collaborative nature of the encounter. Further, for research question two, each CARE Patient Feedback Measure item had a significant difference between the first and second encounter. For a summative score of the 10 questions, there was a significant difference in scores for students interacting and conversing with the standardized patient in first (M = 143.00, SD = 9.888) and second (M = 174.80, SD = 5.371) encounters; t(9) = -16.135, p = 0.000.

The study provides a realistic look into how health profession students respond to patients in an interprofessional setting and answers the call for more exposure to this type of healthcare model to better prepare future clinicians. Communication affects the quality of care as well as the patient's safety; thus, this skill must be practiced and refined before interacting with patients. Healthcare culture will never evolve if future providers are not equipped with the communication skills and knowledge to implement a collaborative model into the system, and this study suggests that this simulation approach with interprofessional providers is effective for practicing this skill.

# Assessing the Effect of an Advertising Literacy Intervention in Peruvian Schools

*Peter Busse, Universidad de Lima*
*Lucila Rozas, Universidad de Lima*

Because childhood obesity is a growing problem in Peru, children need to learn about the influence of food advertising, which tends to promote unhealthy products in Peru (Busse, 2018). Drawing on the conceptualization of advertising literacy –which involves conceptual advertising knowledge, attitudinal advertising literacy and advertising literacy performance (Rozendaal, Lapierre, Van Reijmersdal & Buijzen, 2011; Rozendaal, Opree & Buijzen, 2016)— and following a prior curriculum guided by this conceptualization (Nelson, 2015), we developed, implemented and tested the effect of an intervention aiming to empower children to mitigate the effect of food advertising in the context of Peru. An intervention was designed to develop the three dimensions of advertising literacy over four half-hour sessions. In the two intervention schools, experts trained teachers who, in turn, delivered the intervention to their students in the classroom over a period of one month. Teachers in the control school received a dossier with information about food advertising in Peru and the national Law regarding the promotion of healthy eating among children and adolescents. The evaluation followed a pre-post design for elementary students (two intervention schools; no comparison school) and a randomized control trial with two arms (two intervention schools; one comparison school) with pre-post measures for high-school students. The study took place between April and July 2019. Overall, results showed null effects on several of the outcome measures. Yet for elementary students, the intervention influenced items related to attitudes towards eating unhealthy foods and "Skepticism toward advertising " while, for high-school students, items related to "Understanding selling intent" and "Understanding persuasive intent." This paper discusses both the design and implementation process as well as the results of the evaluation of this intervention in the context of a low-and-middle income country such as Peru.

**Breaking Down Intervention: A Thematic Analysis of Persuasive Narratives in Substance Abuse Interventions**

*Julie Martin, North Carolina State University*

With the rise of opioid-related overdose deaths in the United States, substance abuse and addiction is becoming a growing problem for many individuals and their families. In 2017, there were over 70,000 overdose deaths in the U.S, a 2-fold increase within a decade (National Institute on Drug Abuse, 2019). Substance use disorders (SUD) not only affect the individual who is using, but also put a strain on families by displacing parental roles to grandparents (Anderson, 2019), disrupting family systems (Jacob & Johnson, 1999), and increasing the chance of fellow family members developing a SUD (Merikangas et al., 1998). Despite this, family members can be vital to intervening in a family member's addiction and supporting them during the recovery process. This paper aims to provide new information on the most prevalent persuasive strategies for families participating in substance abuse interventions. Using episodes of the A&E television show Intervention, this study assesses the content of narratives that family members use during substance abuse interventions when persuading an addicted individual to seek treatment. Thematic analysis is being used to code episodes for persuasive narratives which are further organized by patterns, and categorized into themes and subthemes. Preliminary results have begun to show that narratives of support, nostalgia, and ultimatums are common. Upon completion, this work aims to broaden the literature on the role of the family within substance abuse interventions and also provide addiction specialists with more precise tools they can use with family members when preparing them for a family-centered intervention.

# Caring versus Competition: Tensions Emerging in Hospital Mission Statements

*Hannah King, University of Alabama*

Rationale: The mission statement of an organization is accepted as a way to define the existence of the organization. Researchers have created a large body of literature to demonstrate the importance for an organization, regardless of industry, to have a defined reason for existence. These statements are referred to as missions, visions, goals, or objectives, and much work is put in to make them identifiable within the company. In this study, the researcher seeks to analyze the content of mission statements within a region (Southeastern United States) using grounded theory (Glaser & Strauss, 1967) to determine the commonalities, content, and themes. In a region where healthcare is critical to employment, quality of life, and rural access to care, these statements provide a concise look at how organizations approach the multiple pressures incumbent upon their existence.

Method: The study involved analyzing the mission statements of hospitals that received the Joint Commission's "Gold Seal of Approval" (N = 73), a certification reserved for hospitals that demonstrate an excellence in providing services. Using information publicly available, mission statements from each hospital were identified and collected. Of the hospitals receiving the Gold Seal, 74% (N = 54) had mission or vision statements available on websites or public relations documents. These statements were then converted to text, and the researcher removed identifying information removed. Using word counts and word frequency analysis with NVivo 12 to create numeric statistics, the data were reviewed until saturation was reached and a codebook could be constructed.

Results: Statements were found to vary in name (mission, vision, culture, passion, purpose, values, or a combination of these) and length (14 – 294 words) but were consistent in commonly used language (care/caring, health, patients, community, quality) and location on their website (under "About Us").

When the statements were reviewed further information, three major themes emerged: directed focus, brand equity, and philanthropic mission. Each mission or purpose statement had at least one directed audience in mind that was identified in the declaration. Minor themes were identified; 'focus' was divided into individuals or groups as well as retention or recruitment. Most surprising was the theme of 'brand equity' as the majority of mission statements communicated the organization's desire to promote their value to a potential customer.

Implications: There are several important implications for this study. First is the shifting intent of mission statements from defining existence to exemplifying a niche in the market. These brief messages that define organizational important and distinction have now grown to communicate perceived quality. This shift is identified (Aaker, 1991) as a move from organizational communication and internal audiences to public relations and advertising to external audiences. The second implication of the study identifies the tension apparent in the duplicity of mission statements. Brief messages are communicating to multiple audiences, causing conflicting understanding about the actual mission of the organization. This duality has not been previously identified, therefore this study provides application to healthcare professionals and healthcare public relations officials to critique their own crafted statements for clarity.

# Classification and Risk Factors of Depression Among Aging Americans: A Growth Mixture Analysis

*Qiwei Wu, Texas A&M University*

Background: The quality of life, especially the mental health of the fast-growing aging population, has been a social and academic concern — research documents how depressive symptoms increase the risk of mortality of the elders. However, how depressive conditions take shape and develop along a substantial aging process needs exploration.

Objective: This study is to investigate (1) the different types of longitudinal changes in older adults' mental status and (2) the risk factors of depression among the elderly population.

Method: Twelve waves' (1994–2016) longitudinal panel data from the Health and Retirement Study (HRS) were used for the analysis. The number of panel participants totals 42053. Measurements included were (1) self-reported mental health status, which was measured at each time point by the subtraction of two positive dummy indicators (happiness, enjoyment) from five negative dummy indicators (e.g., loneliness, sadness); (2) self-reported physical health condition, comorbidity, job stress, drinking, smoking, and exercising behaviors measured at baseline; (3) time-invariant demographic variables, such as gender, race, birth year, and educational background. Growth mixture modeling was performed to explore the types of change in the elderly's mental health. Logistic regression analysis was employed to examine if any demographic or behavioral factors at baseline predict the different types of longitudinal growth of mental health among the elderly.

Results: Two types of mental health growth were found. Type I represents the 60.1% participants that had more depressive symptoms at baseline ($i = 2.252$, $p < .001$) and higher longitudinal increase ($s = .038$, $p < .001$) in depression; Type II exemplifies the 39.9% elderly who lived with fewer depressive symptoms at baseline ($i = .301$, $p < .001$) and had much lower longitudinal increase ($s = .004$, $p < .001$) in depression than Type I. Logistic regression shows that being female (ß = .541, $p < .001$, odds ratio = 1.718) and African Americans (compared to Caucasians) (ß = .386, $p < .001$, odds ratio = 1.471) are positive predictors of the Type I membership. Compared to people with education level less than high school, people who received general education (ß = -.479, $p < .001$, odds ratio = .619), high school degree (ß = -.81, $p < .001$, odds ratio = .445), some college (ß = -.962, $p < .001$, odds ratio = .382), and college and above (ß = -1.276, $p < .001$, odds ratio = .279) are less likely to fall into the first type of depressive development.

Conclusion: The result suggests that a sizable number of elders in the United States may have aged with severing mental problems. Structural/demographic factors, rather than behavioral issues (e.g., drinking, smoking, and physical activities), are significantly correlated with poor mental development. Men, Caucasians, and people with higher educational levels tend to experience a better aging process than those who are women, African Americans, and people with lower education regarding mental status. Future interventions can pay special attention to the elderly who are susceptible to poor mental development over time.

# Clinician Stakeholder Perspectives on HPV Vaccine Uptake Across Indiana Counties: A Qualitative Diffusion of Innovation Study

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HPV vaccination rates remain sub-optimal and there is substantial geographic variability in HPV vaccination across Indiana. Building on this quantitative epidemiological data, Diffusion of Innovation (DOI) provides a framework for exploring the qualitative perspectives of key stakeholders in high and low HPV vaccination areas to understand reasons for vaccine acceptance and uptake. We obtained a state-wide list of vaccine clinic coordinators, split the sample into high, middle, and low county HPV vaccination rates, and then recruited participant stakeholders from high counties (HCs; n=22; avg. HPV vaccination rate=57.6%) and low counties (LCs; n=23; avg.=27%) to participate in telephone interviews. Interview questions explored reasons stakeholders believed their counties had high or low vaccination rates, approaches used to increase rates, and specific strategies used for girls and boys. Using DOI as a framework, we analyzed the transcripts using Braun & Clarke's thematic analysis procedure. We engaged in a recursive process of first examining the data as a whole, and then moved to examining data from the high and low counties for explicit comparison purposes. We developed two major themes related to high and low rates of HPV vaccination adoption: parent-provider communication issues and multi-level system issues. The first major theme focused on the nuances of parent-provider communication about HPV vaccination. While both HCs and LCs indicated using educational materials to increase parental knowledge about HPV vaccination, stakeholders in LCs reported parental misinformation as an insurmountable obstacle to persuasion. Also, while stakeholders in both HCs and LCs were passionate about helping patients receive the vaccine, LCs expressed more frustration with barriers. Not surprisingly, HCs saw parents as partners in the decision-making process versus LCs who viewed parents as obstacles. Two subthemes around vaccine presentation emerged as well. HCs reported presenting the vaccine as "due," while most LCs did not. Further, in contrast to LCs, HCs reported using targeted strategies to ensure parents saw the vaccine as compatible with protecting both sexes. The second major theme was multi-level system issues (e.g., clinic, school, community, and county) affecting HPV vaccine uptake. HCs reflected on the importance of professional development for all office staff, outreach programs with the surrounding community, and a positive relationship with the school system. In contrast, these elements were not addressed in a meaningful way by LCs. LCs did stress several structural barriers that negatively impacted HPV vaccination rates (e.g. difficulty scheduling appointments, insurance/reimbursement issues, etc.); HCs did not mention these as barriers. In sum, HCs saw the larger social system as facilitating diffusion of the HPV vaccine, while LCs identified aspects of the social system as impeding diffusion. This study revealed important differences in communication about, and perceptions of, HPV vaccination barriers and facilitators among stakeholders in LCs and HCs in Indiana. DOI provided a useful framework for uncovering these differences that exist at within the clinical encounter and the larger social system. Moving forward, the successful strategies used in HCs could be used within LCs in order to increase vaccination rates and reduce geographic variability in HPV vaccination.

**Cochlear or Not? The Effect of Narrative Transportation and Character Identification on Attitudes toward Cochlear Implants**

*Tahleen Lattimer, University at Buffalo*
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Within the past decade, we have seen a steady increase in of portrayals of d/Deaf actors and characters in the media (An et al., 2014). One example would be through the popular Freeform show, Switched at Birth. Throughout its five seasons, Switched at Birth has examined several prominent and even controversial subjects. However, the prominent topic of the show revolves around Deaf culture and identity as well as stigma surrounding deafness ("Switched at Birth", 2019). Through d/Deaf character's experiences, viewers are able to examine how the life of a d/Deaf person can differ from that of a hearing person, and also explore different areas of Deaf culture and values.

One controversial topic that is highlighted is the use of cochlear implants among the Deaf and the attitudes held towards them in both hearing and d/Deaf communities. Briefly, a cochlear implant is a small electronic device which can help provide a sense of sound to a person who is deaf or hard-or-hearing ("Cochlear Implants," 2019). From a medical standpoint, cochlear implants are generally viewed in a positive light as they do allow for the restoration of some form of hearing in the brain. However, the majority of Deaf individuals view this technology negatively as they believe Deafness is a significant part of their identity, and not something which needs fixing.

Within the second season of the show one of the Deaf characters, Cameron, decides to undergo surgery to receive a cochlear implant. This decision requires much debate, and is influenced by the opinions of his friends and family (who are both hearing and d/Deaf). Through his experience viewers are also able to see the concerns he has in terms of the medical procedure itself and what this choice does for him in terms of his identity and role in the Deaf community. But, he ultimately determines that he is the one who defines his Deaf identity and that his identity can include a cochlear if he so desires.

Given this background, the current study examines the role narrative transportation and character identification play in shaping hearing attitudes towards cochlear implants and d/Deafness. Through a pre/post-test design, hearing participants attitudes towards cochlear implants as well as d/Deafness are examined in light of their exposure to Cameron's narrative. Results serve to first evaluate the effectiveness of communicating and educating viewers on this issues in light of d/Deaf culture. Additional findings related to facilitating meaningful conversations between d/Deaf and hearing communities, as well as the attitudes towards this device through both individual and cultural lens are also discussed.

# Combating Misinformation through Social Sharing: Can Heuristic Cues Prime Individuals' Sharing Intention of Corrective Messages?

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Objectives: Although a wealth of studies has examined the effects of misinformation (Ecker et al., 2014; Ecker et al., 2015) and corrective messages (Aikin et al., 2015; Bode & Vraga, 2018), little attention has been paid on the social diffusion pattern of both misinformation and corrective messages (Liang, 2018). The participatory nature of social media made it an equal platform for misinformation and corrective message to combat with each other. However, misinformation was found to hold unique advantages in viral sharing when compared with corrective messages that were designed to refute misinformation and promote scientific knowledge (Southwell & Thorson, 2015).

To provide a more nuanced understanding of how corrective messages were shared by individuals and explore the mechanisms behind the decision, this study has three aims:

1)      Understand whether individuals selectively share the message that was consistent with their prior attitudes after being exposed to both misinformation and corrective messages.
2)      Understand whether source cues and social endorsement cues of a corrective message could prime individuals' sharing intention.
3)      Understand the mechanism underlying the influence of source cues and social endorsement cues by examining the mediation role of attitude certainty.

Methods: 267 participants were recruited in a large eastern University for credits. A 2 (expert source/non-expert source) x 2 (high social endorsements /low social endorsements) between-subject experimental design will be conducted, where all the participants would first be exposed to a misinformation message and then be exposed to a corrective message. Source cues would be operationalized as expert source versus nonexpert source. Expert source would be represented by FDA, which is the administration that is responsible for issuing food regulation and communicating food risks. A non-experiment source would be represented by a fictitious ordinary person account. Social endorsement cues would be represented by the number of shares and the number of likes.

Findings: Results found that individuals are more likely to share ($b=.17, P<>05$), click a "like" ($b=.29$, $P<.05$), add a supportive comment ($b=.15$, $P<.05$), and less likely to add a refutative comment ($b=-.29$, $P<.05$) when the misinformation correction message is pro-attitudinal than counter-attitudinal.

Regarding the influence of messages, results found that when the source of corrective message is expert, participants are more likely to share it when the corrective message is accompanied with high social endorsements relative to low social endorsements ($MD=5.34$, $SD=.22$, $P<.05$); however, there is no significant difference in individuals' sharing intention between high social endorsements messages and low social endorsements messages when the source is from social peer.

Besides, when the corrective message is accompanied with high social endorsements, there is no significant difference between an expert source and a social peer source in participants' sharing intention; however, when the corrective message is accompanied with low social endorsements, participants are

**Communicating Difficult News to Parents of Children with Disabilities: The Role of Emotion in Sensemaking**

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Parents of children with disabilities are frequently given news that is difficult to hear and can be very traumatic. Whether parents are receiving an initial diagnosis or assessment data of their child's academic performance, emotional reactions to the information almost always occur and are central to the sensemaking process as parents give meaning to what they have learned (Grant, Rodger, and Hoffman, 2015). Their emotions impact actions they take as parents and decisions they make for their child. Too often, the emotional component of communicating medical, educational and social information to parents of children with disabilities is minimized even though it has a significant influence on the meaning parents give to information. Professionals sometimes assume parents can objectively receive information that is often communicated in a technical and clinical way and do not give parents the time to emotionally process what they have learned, which can affect parental ability to take actions that could be critical to caring for their child (Carlsson, Starke, and Mattsson, 2017). This poster session presents the results from a series of focus groups with 21 parents of children with disabilities who discussed their emotional reactions to information communicated to them about medical, educational and social concerns. They also discussed the sensemaking they experienced as they processed and gave meaning to information in these contexts. Several themes emerged that describe the centrality of emotion in the sensemaking process. Implications for provider-parent interactions also will be presented.

# Communication Initiation Barriers and Strategies in Patient Doorknob Disclosures

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Rationale: Doorknob disclosures occur when patients wait until the end of an appointment, often when the provider has their hand on the doorknob ready to leave the room, to (1) disclose their real reason for the visit, (2) disclose important health information needed for their care, or (3) ask important questions relevant to their care. Previous research about doorknob disclosures is limited; what is known is that providers see the communication event as disruptive to their appointment agenda setting and believe patients engage in doorknob disclosures for attention. No research exists examining doorknob disclosures from the patient perspective or from a communication perspective.

Method: Twenty participants who experienced a doorknob disclosure were interviewed. Participants doorknob disclosed about a variety of health issues, including cysts, allergies, vaping, requesting an Adderall prescription, and birth control. The semi-structured interview protocol asked participants to explain their doorknob disclosure event and offer recommendations for how patients and providers can work to reduce doorknob disclosures. The transcribed interviews resulted in 113 pages of single-spaced data. The authors used an emergent thematic analysis to analyze the data.

Results: Patients identified a number of communication initiation barriers which could contribute to a doorknob disclosure, including (a) embarrassment about their health issue, (b) uncertainty of provider response, including fear of provider judgment, (c) the controlling nature of the provider agenda setting, and (d) an inability and fear to admit health and life struggles. Many of these barriers were related to fear about their future health and the unknown outcome of the doorknob disclosure.

Participants engaged in two communication strategies to initiate the doorknob disclosure: (a) "waiting for the right time" and (b) a passive approach. Providers' agenda setting drove the appointment, so many participants often waited and looked for an appropriate time to interrupt the provider's agenda and change the direction of the discussion. To do this, patients often relied on a passive communication approach, rushing to get the question out and presenting it as an apathetic "no big deal" if the provider blew off the doorknob disclosure. These doorknob disclosure initiations were bound by a temporal tension—they were driven by a sense of imperative ("I can't let them leave") but also tethered by a concern for if that appointment was the right time or place to bring up their concern ("Should I do this when I didn't say this was the original reason for the appointment?").

Implications: Although participants identified primarily internal barriers (e.g., embarrassment, uncertainty), their communication strategies are deeply connected to the external control of the provider's appointment agenda. Patients believe they must learn to read the provider's agenda setting strategy and find ways to insert themselves into to the conversation. Patients' use of passive and apathetic communication also serve as a face-saving strategy. This raises concerns about patients' ability to be active participants in the decision-making process and providers' commitment to patient-centered care. More research is needed to identify active communication strategies to help patients and providers navigate doorknob disclosures.

# Communities of Practice: Intersectional and Interdisciplinary Response to Outbreaks of Highly Pathogenic Avian Influenza

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Highly pathogenic avian influenza (HPAI) is an endemic plague that has killed millions of wild birds and farmed poultry, cost billions of dollars in lost revenue, and has remained a significant zoonotic threat to human health. Considering the many ways in which the disease can be transmitted via human behavior, communication researchers have a responsibility to discover and disseminate effective strategies to increase biosecurity efforts and decrease the risk of contagion. A particularly efficacious framework for this is communities of practice (CoP). CoP are synergistic collectives of experts from diverse backgrounds who use their expertise to communicate regularly to solve shared problems (Wenger, McDermott & Snyder, 2008). This study analyzed interview data from 11 interdisciplinary experts who responded to HPAI outbreaks in Indiana, Iowa, and Minnesota between 2014 and 2016. Veterinarians as well as government and university extension agents were asked to reflect upon the lessons they learned from these crisis events. Interview transcripts were coded for evidence of the CoP variables: mutual engagement (i.e., intersectional and interdisciplinary relationships), shared repertoire (i.e., knowledge of biosecurity strategies), and negotiation of joint enterprise (i.e., communication of expertise to stakeholders). Essentially, mutual engagement refers to "the who," shared repertoire refers to "the what," and negotiation of joint enterprise refers to "the how" in CoP. Results indicated that individuals from poultry corporations, farm owners, managers, and workers, as well as veterinarians and agents from federal and state governments mutually engaged to respond to outbreaks of HPAI. Of primary concern in their shared repertoire were ideas about how to reduce the risk of spreading the virus (e.g., creating barriers for visitors, buying animals from reputable sources, suspending poultry shows at state fairs) by comparing model and anti-model biosecurity practices they observed. Perhaps what was most interesting were the numerous challenges mentioned in the negotiation of joint enterprise. Some interviewees noted that response teams must be local and speak plainly to stakeholders using narratives that would accurately reflect the risks of poor biosecurity. Building supportive interpersonal relationships with farmers was recommended to help lessen the often-devastating psychological effects of losing an entire flock of animals. Other interviewees noted that communication should be highly centralized and official, as this would decrease proliferation of inaccurate information, as well as increase the ethos of crisis response teams from outside the local community. Overall, this analysis reveals that there is tremendous opportunity to grow CoP via the inclusion of communication practitioners with diverse expertise (e.g., health, risk and crisis, interpersonal, and mass media) which could make CoP like this better prepared for future crises.

# Comparisons Between Pediatricians' and Nurses' Evaluations and Implementation of a Training on Breast Cancer and the Environment

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Pediatricians and pediatric nurse practitioners are often referred to as gatekeepers of information, giving them the power to choose topics to discuss with young patients and their caregivers. One in eight women experience breast cancer at some point in their life, and recent findings establish the link between environmental and life style risk factors for young girls and their breast cancer risk across their lifespan. The Breast Cancer and Environment Research Program (BCERP) links environmental risk factors to breast cancer and communicates these findings to help pediatricians (Ps) and nurse practitioners (NPs) inform young women and their caregivers about environmental risks during critical periods in the young women's lives. One way to reach providers is through continuing medical education (CME).

An interdisciplinary team of communication researchers, scientists, and advocates from the BCERP collaborated to create a CME training program for pediatric health care providers about environmental risk factors and communication strategies necessary to disseminate the information to young patients and their caregivers. Fifty Ps and 50 NPs evaluated the accredited CME training program.

Previous research indicates that there may be differences between how Ps and NPs approach diagnoses and care. Therefore, this paper aims to explore potential differences between the evaluation and implementation of the training between Ps and NPs. Quantitative and qualitative assessments of knowledge, attitudes, behavioral intentions, and behavior over multiple time periods were analyzed. All participants also answered open-ended questions concerning the changes they intend to make in their practices, the behaviors they integrated into their practice three weeks post training, any barriers they encountered in making the changes, three memorable takeaways, and feedback about the training.

The current study considered both the quantitative and qualitative measures to compare evaluations and implementation of the training between Ps and NPs. Overall, there was more knowledge gained over time for Ps compared to NPs, however, NPs scored higher than Ps in attitudes, intention, and behavior. Interestingly, the regression model predicting behavior from knowledge, attitudes, and intentions was statistically significant for Ps, but not for NPs.

Despite differences found in the quantitative measures, qualitative analyses of the open-ended items demonstrated that the two groups responded similarly to the training. Both groups reported that the biggest barriers to integrating the information in their practice was time with patients, however both also reported that they plan to discuss environmental exposures in well-child visits. When asked about memorable lessons from the training, both groups recalled information about risks for breast cancer, however more NPs specifically mentioned one key concept, "windows of susceptibility." Both groups provided positive feedback about the training, mentioning that it was "very informative," "well organized" and "easy to follow." The findings from the current study exemplify that the differences and similarities between Ps and NPs are complex, however it is possible to create CME training programs that are beneficial and effective to both parties.

**Controversy, Backlash and a Magic Dose: The Social Representation of the HPV Vaccine among Jamaican Women.**

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Jamaican women have higher human papillomavirus (HPV) prevalence than similar Caribbean nations, certain minority populations in the United States and other at risk populations in Europe (Lewis-Bell, 2018). Without regular screening, HPV can develop into cervical cancer; almost half of the Jamaican women who are annually diagnosed with cervical cancer die from it. Despite the comparatively high prevalence rates of HPV and burden of cervical cancer, Jamaican women are neither participating in routine pap smear screening, nor consenting to having their daughters vaccinated for HPV. Only 22% of the targeted population received the full dosage of the vaccine in the first year it was administered in high schools in October 2017 (Wilson-Harris, 2018). We utilize Social Representation Theory (SRT) to attempt to understand this underwhelming response, since the framework explains the process of formation of a shared meaning making about a novel event such as a new vaccine being introduced to communities. SRT examines the interaction of individual cognition, media impact and interpersonal influences, which forms a "popular cognitive representation" or social representation (Sommer, 1998, p. 186). Social representation can be so influential that it even overrides personal experience with the event (Moscovici, 1988). To carry out the study, we first analyzed newspaper articles published since the announcement by the government in May 2017 and up to June 2018. We searched for "HPV vaccine" in the title or in text three most popular newspapers in Jamaica: Gleaner, Observer, Star. We included hard news content, feature stories, letters to the editor and "editor's forum" into our coding sheet. To understand the valence and quantity of news articles, a combination of inductive and deductive coding was employed, using nVivo qualitative software to conduct the thematic analysis. We found a predominance of negative framing, particularly during the months surrounding implementation of the vaccine (September to October 2017), including the use of inflammatory language like "magic pill", "controversial vaccine" and associations with HIV (related to the introduction of PREP). Then, we recorded conversations among Jamaican women in 8 focus groups in Kingston in June 2018. In the group discussions, women expressed vaccine resistance narratives themes such as skepticism of vaccine safety, references to traditional treatment and prevention strategies, expressions of HPV and cervical cancer stigma, and defensive avoidance messages. Regarding the HPV vaccine, many women suggested that their first knowledge of HPV only came at the introduction of the vaccine in high schools in the island. According to Participant 29 (FG 6):"They were talking about it but we didn't really… they never explain about it. We said to ourselves it would probably prevent early pregnancy in the girls". The communication attempts by the government did not effectively dispel misconceptions about the HPV vaccine that are prevalent in communities. We found that media stories were congruent with the lack of knowledge, and negative attitudes and opinions of the women. We suggest that the media must directly address misconceptions in simple language and acknowledging the sociocultural context to effect greater change HPV vaccine uptake.

# Conversations with Diabetes Educators in Appalachia: Experiences, Insights and Visions

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Background: In Appalachia, the most economically distressed counties also have the poorest health (Borak, Salipante-Zaidel, Slade, & Fields, 2012). Geographic isolation, limited access to health care, and cultural beliefs contribute to local health outcomes (O'Brien & Denham, 2008). As such, individuals living in Appalachia may postpone seeking medical assistance from health professionals, preferring first to obtain advice from family and social networks. Diabetes educators working in Appalachia are uniquely positioned to highlight health education and community-based diabetes challenges in the region, as they serve to bridge the gap between professional and lay sources of information.

Study Introduction: This study sought insight from diabetes educators working in Southeastern Ohio and Eastern Kentucky. Data were gathered around "wins", challenges, and the types of assistance these diabetes educators desired for future patient interactions. Specifically, key informant interviews were conducted to explore the following research questions:

What experiences have Appalachian diabetes educators faced in the field? What can be learned from their experiences?

Method: Seven semi-structured key informant interviews were conducted with diabetes educators serving the counties of Bath, Clark, Menifee, Morgan, and Rowan in Kentucky, along with Athens, Holmes, Noble, Gallia in Ohio (some educators served more than one county). All interviews were conducted via telephone. Interviewees were asked a series of questions about their experiences, processes, insights and challenges in their diabetes educator position. Interviews were recorded, de-identified and transcribed for analysis. Two graduate students coded the data for prominent themes that emerged across the discussions using Owen's (1984) criteria. Faculty members reviewed and aided in the interpretation of the codes and themes identified.

Findings: Several themes emerged from the analysis. Specifically, diabetes educators vocalized issues related to their patients' managing misinformation, lack of knowledge, and skewed perceptions: "I think that they don't know the full scope of it. I think that part of it is because we have oral medications out there and people think that their diabetes isn't very bad because they're taking a pill." Another participant added, "I think they assume that if they get online and then they Google diabetes that they're going to get reliable, current information… and if you can't – if you don't have internet access, your neighbor will stand in the backyard and tell you all about it because she got it too."

Other emergent themes included the personal blame that diabetes educators heard from their patients; the challenge of navigating family and friend relationships; and a strong focus on dietary change (with less discussion about of physical activity). Finally, the need for additional focus and resources aimed at supporting children in the community with a diabetes diagnosis was noted across many interviews. One diabetes educator plainly stated, "I would like to see uh– a child support group because we have several diabetic kids that need more support."

# Counselling, Gossiping, or Silence – Interpersonal Communication about Mental Illnesses and its Role for Stigmatization

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Worldwide, every third person falls mentally ill during his or her life [1]. Although public attitudes towards the treatment of mental illnesses are improving, patients are still stigmatized in manifold ways [2]. Stigmatization, however, is an additional burden for those affected and their relatives, complicating as well as impeding early diagnosis and treatment [3].

When researching the stigmatization of people with mental disorders, exploring the role of interpersonal communication appears to be key: Interacting and communicating with people affected has not only been shown to be an effective anti-stigma-measure [4,5] and has successfully been used in anti-stigma interventions [6], but feeling more or less comfortable in communicating with people with mental illnesses is also an important indicator for the attitude towards these patients [7]. As the role of interpersonal communication for mental health stigma is still understudied, we aim at a deeper understanding of the multifaceted forms of interpersonal communication about mental illnesses and pose the explorative research question: How do people perceive and engage in interpersonal communication about mental illness?

Method: We conducted 32 semi-structured face-to-face interviews in Germany. Respondents varied in gender, age (21-93 years), education, rural vs. urban residence, and mental health-related factors (healthy vs. directly vs. indirectly affected). The interview guide covered questions on perceptions of mental illness, with a special focus on communication. The interviews were transcribed verbatim and analyzed through a computer-assisted qualitative content analysis based on inductive and deductive coding strategies.

Results: Our data provide comprehensive insights into communication patterns which can be described along the following dimensions: (1) The social references of interpersonal communication are very broad. Respondents not only described their experiences in talking to mentally ill people, but elaborated also on conversations about single persons affected, about mentally ill people in general, about mental health in general, and about their mental health status. They further pointed to different social settings, in which conversations occur, e.g., at university, in clubs, in medical care institutions, and the private environment with friends and family. (2) The intensity of communication reached from strict restraint over a very selective communication behavior, to diverse and intense communication in manifold settings. (3) Regarding the content of the communication our respondents addressed multiple issues, e.g., specific problems from or with people affected, potential support measures, own experiences, politics or the public discourse. (4) Further, interpersonal conversations on mental illnesses appear to have different purposes: they fulfill both informational and emotional support needs, provide orientation and a sense of belonging, but can also be a subject of jokes, and thus be entertaining. (5) Finally, the interviews pointed to different communication styles, ranging from thoughtful to nasty.

Discussion: Our data illustrate the very different facets of interpersonal communication about mental illnesses, in which stigma is formed, pronounced, spread, but also changed. We will reflect these findings regarding the driving forces of different types of communication, including the consequences for people affected and non-affected and on regard to shaping public opinion. Finally, we will discuss the implications of our study in light of stigma research and theory.

# Cross-national Coverage of Mental Health Services: Community Structure Theory and "Buffered" Privilege

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Community structure theory (Pollock, 2007, 2013a, 2013b, 2015) was used to compare cross-national newspaper coverage of access to mental health services in leading newspapers, one per country, in 14 countries, analyzing articles of 250+ words from 09/16/09 to 09/16/19. The resulting 231 total articles were coded for "prominence" and "direction" ("government responsibility," "society responsibility," or "balanced/neutral" coverage) and combined into composite "Media Vector" scores for each newspaper (range 0.3827 to -0.0111, a total range of 0.3938). A majority, 12 of 14 (85.71%), of Media Vectors registered "government responsibility" for access to mental health services.

Overall, measures of privilege were robustly connected to coverage supporting government responsibility for increasing access to mental health services. It was expected that higher privilege levels (populations "buffered" from uncertainty) would be associated with coverage emphasizing government responsibility (Pollock, 2007, pp. 61-100). This hypothesis was confirmed. Measures of broadband subscriptions per 100 people in a nation ($r = 0.54$, $p = 0.023$), literacy rate ($r = 0.492$, $p = 0.037$), and hospital beds per 100,000 people in a nation ($r = 0.451$, $p = 0.053$), were significantly connected with coverage emphasizing government responsibility for increasing access to mental health services. Of the non-significant results, nine of ten measures of privilege were also "positively" and "directionally" consistent with the major "buffered" privilege pattern. A regression analysis revealed that broadband subscriptions per 100 people in a nation (40.9% of the variance), together with literacy rate (16.5%), accounted for 57.4% of the variance. collectively associated with media emphasis on government responsibility to increase access to mental health services. Finding that measures of "privilege" are linked to reporting emphasizing "government" responsibility for human rights claims parallels previous research on cross-national coverage of human trafficking (Alexandre, et al., 2014, 2015) and HIV/AIDS treatment access (Etheridge, et al., 2014, 2015).

Contrary to prediction, a "violated vulnerability" pattern was also encountered. (Vulnerable demographics can be associated with less media support for government responsibility for human rights claims, perhaps because of lack of trust in government or because immediate personal concerns outweigh broader social issues.) Specifically, military spending as a percentage of GDP was associated with "less" media emphasis on government responsibility for access to mental health services (26.8% of the variance), as were, consistently, 11 non-significant vulnerability measures "directionally" mirroring the "violated vulnerability" pattern.

Empirically, measures of "privilege" — broadband subscriptions per 100 people in a nation, literacy rate, and hospital beds per 100,000 people - were closely linked to cross-national media emphasis on "government" responsibility for increasing access to mental health services. Methodologically, combining measures of both "prominence" and "direction" generated highly sensitive Media Vectors that highlighted the capacity of the media to reflect community measures of "privilege" and "violated vulnerability." From a theoretical perspective, this access to mental health services study confirmed an empirical finding by one of the founders of "agenda-setting" theory, urging that agenda-setting's "top-down" perspective is robustly complemented by the "bottom-up" viewpoint of community structure theory's indicators of community-level demographics (Funk & McCombs,

# Demographic and Psychosocial Correlates of Family Cancer History Communication among U.S. Adults: Findings from the 2018 HINTS

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Many Americans are susceptible to cancers that run in their families, and a family history of cancer increases an individual's risk of developing cancer.1 Awareness that family history is associated with cancer outcomes remains low.2-3 Lack of discussions within family networks contributes to low awareness,2-3 yet predictors of family cancer history communication are not well understood. The study examined demographic and psychosocial correlates of family cancer history communication.

Data from the 2018 Health Information National Trends Survey were used to describe awareness of family cancer history (1=No knowledge; 5=Very well); confidence in completing family cancer history information (1=Not at all confident; 5=Completely confident); and discussions about family cancer history (1=Ye; 0=No) among 3,504 adults. HINTS 2018 was the first to assess family cancer history communication among a national sample of U.S. adults. Weighted multivariable linear and logistic regressions determined factors associated with study outcomes.

A third of the U.S. population (33.40%) said they were very well aware of their family's cancer history, while 6% said they did not know their family's history at all. Another 30% said they knew some (22.82%) or a little (7.35%) of their family's cancer history. One-fourth (25.13%) said they were completely confident that they could complete a summary of their family cancer history on a medical form; more than 20% combined said they were not at all (11.63%) or a little (9.73%) confident. While more than three-fourths of Americans said they had discussed their family's cancer history (most often with their mother or sister), 22% said they had not had any discussions about such information.

In multivariate linear regression analyses being female and having some college or more were positively associated with awareness of and confidence in completing information about family cancer history. Being older was positively associated with confidence. While few racial differences emerged, Asian Americans significantly less aware and less confident. Having ever looked up information about cancer was also associated with confidence.

The logistic regression analysis also showed that females (OR: 1.74, p < .01) and those with some college (OR: 2.39, p < .05) or college graduate (OR: 2.90, p < .05) had higher odds of discussing family cancer history. Black/African Americans (OR: .49, p < .05) and foreign-born Americans (OR: .51, p < .05) had lower odds of discussing family cancer history. People with a family member who had ever had cancer had .31 lower odds while people who ever looked up information about cancer had 2.10 higher odds of discussions. Awareness (OR: 1.72, p < .001) and confidence (OR: 1.41, p < .001) were also associated with discussions.

Psychosocial variables (i.e., beliefs about cancer) were not associated with family cancer history discussions.

This is the first study, to our knowledge, to investigate the predictors of family cancer history communication nationally. The findings indicate disparities in communication behaviors. Men, racial/ethnic minorities, and those with less education were less engaged with their family's cancer history information and discussions. The study has implications for cancer communication and communication inequalities.

**Design and Development of a Gamified Mobile Application to Improve Adherence to Dietary Self-Monitoring**

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The obesity problem in the US has reached epidemic proportions with about 72% of Americans being classified as overweight or obese[1]. Overweight and obese are associated with an increase in risk for a number of chronic diseases including diabetes, cardiovascular disease and some forms of cancer. This epidemic also has profound economic impact in the US. Healthcare costs for obesity and associated diseases has increased to $149 billion annually.

Dietary self-monitoring (DSM) is a major component of many efficacious behavioral weight loss interventions. In fact, continuous and long-term self-monitoring has been particularly advantageous for weight management [2-4]. DSM may involve a number of strategies including calorie counting and food logging. Research, however, shows that the method and accuracy of self-monitoring may not be as important as the frequency and consistency of self-monitoring[5]. Self-monitoring activities, however, can be burdensome and research has shown that adherence typically decreases over time. There are a number of mHealth solutions on the market that may facilitate better and more frequent self-monitoring and health tracking as well as improve the scalability of behavioral weight-loss interventions. One advantage of mobile-based weight loss interventions is that these allow for self- monitoring to occur more proximal to the actual behavior being tracked (e.g., eating behavior)[2]. Despite these promising developments, a large proportion of users abandon mHealth apps and wearables quickly and after minimal use.[6, 7] Research has shown that these apps may still present some degree of user burden because they require users to log caloric intake or food consumption. Thus, there is a critical need to develop strategies that sustain user engagement with mHealth interventions. Research in psychology and behavioral science highlights useful engagement strategies, including goal attainment strategies that motivate people to engage in healthy behaviors.[8, 9] However, research has yet to investigate ways to optimally capitalize on and integrate various theoretically-grounded strategies[10] to promote and maintain engagement.

One promising solution for promoting spontaneous SM of dietary intake and physical activity is through the use of an interactive SM application to optimally capitalize on and integrate goal-setting strategies. Gamification,[11, 12] which integrates game-related design components and principles, provides a unique opportunity to use meaningful and sophisticated techniques to engage participants in mobile-based health behavior interventions.[13] Our team is currently drawing on theoretically-based engagement principles to modify existing mobile apps and improve engagement by employing various transdisciplinary strategies (e.g., goal-setting) . The SM application under development translates meeting one's daily SM of dietary intake and physical activity goal into earning points for allocation toward care of a virtual creature (pet) (e.g., iguana, whale) available within the SM app (Figure 1). Not meeting one's daily goal of SM means that points will not be earned toward care of the virtual pet. This paper will elaborate on the development and pilot testing of this gamified interactive SM application. This project involves a multi-disciplinary team of experts in the areas of translational behavioral interventions. eHealth, psychology and decision sciences.

**Designing for Dissemination of an Electronic Health Record Linkage Method: Stakeholder Perceptions of an Animated Explainer Video**

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Background: The advancement of translational data science could benefit from the dissemination of methods for the design of materials to communicate value propositions and scale-up use of novel healthcare informatics tools. Record linkage (RL) refers to the technical and analytic methods for effectively and securely matching patient records from multiple distinct health systems and data platforms. Adoption of RL methods among investigators allows testing of novel hypotheses using secondary health data from multiple sources. To support future adoption of the RL methods developed, it is important to communicate the value of the methods and systems for using the methods to potential users. "Designing for Dissemination" refers to processes undertaken during planning, development, and evaluation of an innovation to increase potential for future uptake in real-world practice. Dissemination planning steps include identifying audiences, messaging, packaging, and communication channels. With support from PCORI, we are engaging stakeholders in developing effective messages for conveying the value of RL methods to promote future adoption of RL methods and ensure transparency in how patient data are used in research.

Method: We designed an animated explainer video to communicate the value of RL methods and platforms to technical, researcher, and data governance audiences. The phases in designing dissemination materials included: 1) message development, 2) animation prototyping, 3) video development, and 4) message testing. To accomplish message testing, we recruited key stakeholders representing potential adopters of CURL (e.g., data scientists, computer programmers, researchers, and health data decision-makers) to view the video and complete a survey. Survey items measured their current needs for RL methods/solutions, perceptions of the style and content of the information presented in the video, and interest in adopting CURL. Additionally, the same stakeholders were interviewed using customer discovery to inform dissemination planning through the identification of value propositions and other resources needed to support adoption of CURL.

Findings: In the survey (N=18), >70% of participants indicated the video was clear, interesting, straightforward, and relevant to their work. Additionally, 72.2% agreed or strongly agreed that the video "provided the level of information detail needed for you to want to look further into CURL." Preliminary interview results (N=21)suggest value propositions surrounding CURL's ability to standardize the process for sharing data and to establish best practices for probabilistic matching.

Implications: The planning phase is a key step in designing for dissemination of healthcare interventions and research methodologies. It is essential to identify early in a project who are potential adopters (audiences) and what messages are relevant to those audiences. For instance, future efforts will entail the creation of a different video with more patient-centered content and language about RL methods needed for patient audiences. Disseminating best practices and techniques for RL has the potential to leverage the existence of ever-growing repositories of secondary data to support patient-centered health outcomes research.

# Designing Theoretically-driven Facebook Advertising Campaigns to Recruit Rural Adults to Develop Healthcare Delivery Interventions

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Little is known about designing research recruitment campaigns that connect with underserved, geographically-isolated rural populations. Individuals living in rural areas, who have higher rates of a myriad of preventable diseases[1], are as likely their urban counterparts to use the Internet[2], actively engage social media to obtain health information[3]. With its expansive reach, Facebook is particularly useful for disseminating opportunities to participate in intervention development studies to underserved rural audiences.

However, challenges communicating with rural audiences about research participation can impede recruitment[4]. In addition, rural audiences emphasize independence and self-sufficiency in their definitions of health, and their overall health attitudes and beliefs differ from adults living in urban areas[5]. Thus, the messages and information commonly used to communicate with individuals about health research opportunities may not capture the attention of rural audiences and may adversely affect participation. It is therefore critical to develop theoretically-driven, culturally-informed advertising campaigns that communicate messages that resonate with rural audiences in order to engage and recruit underserved, rural populations into healthcare delivery intervention development studies.

A primary goal of designing Facebook recruitment materials is to highlight the relevance of the study and participation and prompt active processing and message engagement among active and passive members of the target audience. We drew from research and theory in communication (e.g., elaboration likelihood model, social identity theory, message appeals)[6-8] and incorporated process analysis techniques to develop replicable procedures for designing and evaluating Facebook advertising campaigns for rural recruitment. Theoretically-driven strategies were applied to assess feasibility and develop materials for recruiting rural audiences into two healthcare intervention development studies. Study 1 aimed to recruit rural adults to participate in the development of a tailored tobacco intervention development. Study 2 aimed to recruit rural parents of adolescents into a mental health communication intervention development study. Twelve study advertisements (ads) (text, headlines, and images) were developed and disseminated for Study 1, whereas six ads were used for recruitment in Study 2. All ads included one image, multiple message strategies (e.g., identity statements, intrinsic & extrinsic appeals), and emphasized rural cultural values and beliefs about healthcare (e.g., independence, self-sufficiency).

Rural recruitment advertising campaigns received approximately 1,000 link clicks from the target rural demographic and met enrollment criteria using Facebook as the primary method of recruitment. Study 1, the rural tobacco intervention development study received a total of 477 link clicks, cost only $155.80, and enrolled 13 participants over the course of three weeks. Study 2, the rural mental health intervention development study received a total of 518 link clicks, cost only $233.28, and enrolled 178 participants over the course of five weeks.

Our theoretically-informed process for designing Facebook advertising campaigns for rural audiences yielded two successful recruitment campaigns. Facebook was an affordable and efficacious strategy for disseminating theoretically-driven messages about recruitment and enrolling rural adults in behavioral research studies on tobacco and mental health. Future work should apply these theoretical techniques to additional study topics and evaluate specific message features (statistics, testimonials) and formats (videos, images) associated with rural social media recruitment.

**Determinants of Physical Activity in Older Adults: Integrating Self-Concordance into the Theory of Planned Behavior**

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Engaging in physical activity is a promising strategy to increase the number of healthy years for older adults (Löllgen, 2013). However, physical activity levels are commonly too low (Guthold et al., 2018). Therefore, effective health promotion strategies are needed, that use theory in order to identify the relevant determinants driving physical activity behavior (Silk et al., 2011).

In this context, numerous studies refer to the theory of planned behavior (TPB; Ajzen & Fishbein, 2010) that has been confirmed in several meta-analyses. However, in the context of physical activity of older adults, research often finds significant effects for attitude and perceived behavioral control (PBC) on intention, but not for subjective norm (Alexandris et al., 2007; Gretebeck et al., 2007) indicating a need for theoretical adjustment. We propose to extend the TPB by integrating self-concordance, defined as the extent to which an individual's goals reflect enduring interests and personal values (Sheldon & Elliot, 1999). Based on the self-determination theory (SDT; Deci & Ryan, 2008), self-concordance can be differentiated into external and introjected regulations (low self-determination) and identified and intrinsic regulations (high self-determination). We assume that this extended model is better suited to explain physical activity behavior for two reasons: 1) While subjective norms are only weakly related to behavioral intention, studies show that they are related to motivation (e.g., Brickell et al., 2006). 2) Fuchs et al. (2017) found that physical activity is driven both by the strength of the intention and its self-concordance. Moreover, habit strength was integrated as a moderator due to its pivotal role in physical activity (e.g., van Bree et al., 2013).

In order to test our model, we conducted a telephone survey with a randomly selected sample of German adults aged 65 year and older (N=865). We computed Structural Equation Modeling with SmartPLS 3 and chose Wold's (1975, 1980) Partial Least Squares approach, as it is recommended for novel theoretical models (A. Fuchs, 2011).

Our findings indicate, that focusing on intention strength only leads to an underestimation of the influence of both attitude and subjective norm on intention. While the relation between attitude and intention strength was rather weak, there was a strong relationship with self-determined regulations—especially for people not used to being active (low habit). In line with the above-mentioned studies, subjective norm was not related to intention strength, but had a strong positive influence on non-self-determined regulations indicating that high perceptions of subjective norms may undermine the self-determination of the intention to be physically active and, therefore, also reduce the probability of the actual behavior. Also, PBC was related to both intention strength and self-concordance (positively with both self-determined and negatively with external regulations).

These results show, that looking at intention strength only while neglecting self-concordance can lead to an underestimation of the role of certain behavioral determinants, which can lead to false conclusions in the development of campaign messages. With this, our study contributes to the existing research both theoretically and practically. Further implications and methodological limitations will be discussed.

**Developing a Digital Decision Aid to Promote Home Stool Screening for Colorectal Cancer: A Patient-Tailored Risk Factor Strategy**

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Introduction: In the United States, colorectal cancer (CRC) is the second leading cause of cancer death in men and women. Early detection, through timely screening, is an effective method to reduce preventable CRC related incidence and mortality. However, current screening rates remain suboptimal. In part, this is due to poor patient knowledge of alternative and less invasive screening strategies, such as home tool screening. Further, the majority of patient decision-aids that address home stool screening do not provide tailored risk information, reducing patient perceptions of informational relevance and susceptibility to CRC. The primary aim of this study, therefore, was to examine how message styles influence behavioral intentions to screen with a home stool test. By drawing on the Elaboration Likelihood Model and the Health Belief Model, the current study evaluated the effectiveness of a patient-tailored risk factor strategy on screening intentions, as well as the mediating effects of perceived message relevance and perceived susceptibility on intentions to screen with a home stool test.

Method: Participants (N=377) were recruited using Qualtrics Panels, a proprietary opt-in online panel company. The survey was disseminated during the Colorectal Cancer Awareness Month (March 30-31, 2015). Participants met national CRC screening eligibility criteria and were randomized to receive one of two message conditions: (1) a generic CRC digital decision aid promoting use of home stool screening or (2) a tailored CRC digital decision aid. Both decision aids included information on risk factors for CRC, with the tailored message condition displaying patient-tailored feedback about their CRC risk factors.

Results: There were no significant differences in main effects between message conditions on intent to screen with a home stool test. Adjusted for participant demographics, screening history, and a composite behavioral risk score for CRC, a path-based analytical framework for serial mediation was conducted. Message conditions were included as a predictor, perceived message relevance and perceived susceptibility included as the mediators in serial, and intent to screen as the outcome variable. There was no significant direct effect of message condition on intent to screen (b=-.35, t=-1.79, p=.08). However, the tailored message condition was significantly better at increasing perceived message relevance than the generic message condition (b=.33, t=2.47, p<.05), with a greater composite behavioral risk factor score also predicting greater perceived message relevance (b =.19, t=2.53, p<.05). There was no significant, direct relationship between message condition and perceived susceptibility (b = -.01, t =-.07, p=.95), but a greater composite behavioral risk factor score predicted greater susceptibility (b=.21, t=2.73, p<.01). There was a significant indirect effect of the tailored message condition on intent to screen, with statistically significant positive associations between all variables in serial (i.e., tailored message condition→perceived message relevance→perceived susceptibility→intent to screen =.01, SE = .01, 95% bootstrap CI=.02,.04).

Implications: The current study's findings offer practical implications for tailoring CRC digital decision aids to promote home stool screening. The findings also further support existing theoretical frameworks to understand the critical mediating mechanisms (i.e., perceived relevance and susceptibility) that help explain the indirect effect tailoring can have on improving patient willingness to screen for cancer.

# Developing Theoretically Informed, Narrative Messages in Health Communication: A Rigorous, Step-by-Step Process

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A narrative, in the simplest terms, is a story. It is a recounted experience, which includes a strategic plot and characters (Hinyard & Kreuter, 2007; Kreuter et al., 2007). Narratives help us understand who we are and cope with life experiences. Narratives can help individuals navigate and adapt to new identities, especially when shaken by news of an illness or potential illness (Frank, 2013). For stories to assist individuals in moving forward in their illness crises, they must be well told and resonant with the individuals.

While the benefits of narratives in health-promotion and behavior change interventions are evident, the process for creating narrative messages is less clear (Perrier & Martin Ginis, 2018). One challenge in creating narratives involves taking personal stories and reconstructing them to address theoretical constructs known to impact behavioral outcomes. Thus, to assist researchers in developing theoretically informed, narrative messages based on personal stories, this manuscript reports a rigorous, six-step process: (1) collecting personal testimonials, (2) immersing self into testimonials, (3) identifying central narratives, (4) piecing quotes into cohesive stories, (5) filling in the gaps, and (6) checking for resonance. To exemplify this process, we provide an example from our research project ePOWER (Table 1 upon request). The goal of ePOWER is to identify the psychosocial information needs of women who tested positive for a genetic variant predisposes them to hereditary cancer in order to help them manage their psychological, chronic cancer-related uncertainty and make preventive health decisions.

To begin, the research team utilizes a theory which assists in accomplishing the intervention's overarching goal. Yet, the target population's experiences, voices, perspectives should guide the intervention. Therefore, the purpose of steps one through three is to understand the population's lived experiences (Patton, 2002). Step one involves collecting personal testimonials. We believe the richest source to collect personal testimonials are qualitative methods (Merriam, 2009). In step two, the team immerses themselves into the lived experiences by seeking an in-depth understanding of the testimonials. Step three involves identifying the central narratives that emerge across the target population's experiences. To do so, the research team distinguishes broad story elements—characters, motives, plots, scenes, time, and life lessons (Yamasaki, Geist-Martin, & Sharf, 2016). In step four, the research team develops the narratives by piecing together cohesive narratives that utilize as much of the participants' actual language from the data. Step five encompasses filling in the gaps by the research team writing their own words into the narratives, while ensuring those words also reflect participants' experiences. The research team returns to theory at this point by analyzing individuals' experiences alongside multiple theoretical frameworks to ensure the narrative messages best reflect the individuals' lived experiences. Step six includes checking for resonance through pilot-testing (Atkin & Freimuth, 2013; Harrison, 2014) or performing member checks (Hesse-Biber & Leavy, 2006).

**Discussions of Inflammatory Bowel Disease on Reddit: Implications for Patient Support**

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Introduction: Inflammatory bowel disease (IBD) is a highly stigmatized gastrointestinal illness affecting more than three million Americans. To cope with such stigma, many patients use social media as a means to seek or provide social support and to discuss various aspects about their illness with others. Systematically investigating IBD discussions on social media could aid health communication researchers in identifying critical disease-related topics important to patients who may be in need of support. The current study examined 1) prevalent topics among discussions of IBD on the social media platform Reddit; and 2) the extent to which certain IBD-related topics were associated with social support.

Method: We collected all Reddit submissions and comments posted between July 2017 and June 2018 containing at least one IBD-related keyword. After data cleaning procedures, our final corpus contained 4,013 submissions and 51,825 comments. We created a term-based computational dictionary to characterize posts based on seven different IBD-related topics: 1) social support, 2) food/diet, 3) medications/treatments, 4) ostomy, 5) surgery/hospitalization, 6) medical marijuana, and 7) symptoms. Topics were not mutually exclusive. We also classified posts if they were published in an IBD-related subreddit. We used descriptive statistics to characterize the prevalence of topics and IBD-related subreddits among the corpus. We used multivariate logistic regression analysis adjusting for several covariates to identify variables associated with social support posts.

Results: Among the full dataset (N = 55,838), there were a total of 25,856 unique authors posting in 3,473 different subreddits. The most popular IBD-related subreddit was Crohns Disease (20%). Across both comments and submissions, roughly 32% of posts contained social support content (either seeking or providing support). Topics among posts were mostly about IBD symptoms (30%), food/diet (24%), and medication (24%). Fewer posts were about ostomies (16%), surgery/hospitalization (13%), and medical marijuana (6%). In multivariate analysis, we found that Reddit posts discussing IBD medication (adjusted odds ratio [aOR] = 1.88), health/diet (aOR = 1.71), and symptoms (aOR = 1.54) were most associated with social support (all $p < .001$). In addition, we found that posts in IBD-related subreddits (as opposed to all other subreddits) were more than two times as likely to contain supportive content (aOR = 2.21; $p < .001$).

Discussion: This study adds to a growing body of literature examining how IBD is discussed on social media. Our findings show that social support is widely discussed among IBD-related posts on Reddit. Moreover, our results show that certain IBD-related topics, such as health/diet and medication, are most associated with these discussions of social support. Given the stigma that many patients experience due to their illness, we believe these findings are critical as they could potentially inform future work aimed at developing and testing social support messages for patients in need.

**"Do you Remember what it was About?" A Taxonomy of Messages about Healthy Behaviors Recalled by Adults in Chile**

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Exposure to health information plays a key role in the adoption and maintenance of behaviors that prevent severe chronic conditions, such as cancer or cardiovascular disease. In the field of health communication, the role of information acquisition has been widely studied mainly through quantitative and survey-based research. Even though these studies have found that information exposure significantly influences the practice of certain health behaviors, these effects are rather small. One plausible explanation for those findings is that the measures of health information exposure used by the vast majority of these studies are limited in that they fail to capture the specific contents individuals are exposed to. Considering the wide variety of messages about a given behavior individuals might receive from a diverse range of sources, it is expected different messages to have different associations with behavioral adoption and/or maintenance. In this study, we present a qualitative exploration of the contents individuals recall receiving about four health behaviors: Physical activity, fruit and vegetable consumption, weight loss, and smoking.

Thirty-six semi-structured interviews were conducted with adults 25 years and older who live in Santiago, Chile's capital city. Participants for this study were recruited through a local research firm. Age and socioeconomic status quotes were set to maximize sample diversity. The semi-structured interview guide comprised questions about everyday media consumption, access to general health information, and access to specific information about the four health behaviors addressed in this project. Interviews were audio-recorded, transcribed verbatim and analyzed with Atlas.ti 8.

The messages about the four health behaviors individuals recalled can be grouped into three categories:

Information about risks and benefits associated with the behavior, practical information, and prescriptions. The latter category refers to instances in which individuals receive messages, usually from health professionals, that make them feel mandated to engage in the behavior.

Participants recall receiving positive messages about the behaviors (i.e. benefits), but also negative messages (i.e.risks or unwanted consequences of adopting the behaviors). Whereas the former work as motivators for behavioral change, the latter are used to justify the non-adoption of the behaviors. This is particularly salient in the case of fruit and vegetable consumption. Finally, across all behaviors, participants mentioned having been exposed to practical information, such as specific recommendations or tips for carrying out the behavior. This type of information is primarily obtained through information seeking, and especially salient among participants who are currently engaged in the behavior.

This qualitative study sheds light on the content of health messages people recall having been exposed to. Even though many of the messages individuals recall tend to be functional for behavioral adoption and/or maintenance, people also receive negative messages that might undermine their willingness to adopt or maintain healthy behaviors. This taxonomy of messages about healthy behaviors might be a good starting point for a more nuanced measure of health information exposure that could capture the types of messages individuals are exposed to about specific behaviors and the degree to which each type of message is associated with its practice.

# Does Exposure to News Media Coverage of Anorexia Increase Risk Self-Efficacy (RSE)? A New Measure of Unintended Media Effects

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In an online experiment using two waves of data collected at a one-month interval, we test a new construct – RSI: Risk Self-Efficacy. RSI is based on self-efficacy (social cognitive theory: Bandura, 1986; 1989; 2004), but captures unintended effects of exposure to information about behaviors that increase personal risk, on reported self-efficacy to perform the risky behaviors. This study tested the effects of exposure to videos about anorexia (n = 358). We compared effects of exposure to videos providing information about behaviors that are performed in order to lose weight (Risk Self Efficacy Information: RSEI), to equivalent videos without this information. These behaviors included calorie restriction and using laxatives, among others. Video messages were adapted from extant news footage and were edited for this study.

Hypothesis: We hypothesized that exposure to RSEI (Risk Self-Efficacy Information) would lead to increased agreement that the behaviors described are effective for weight loss (Overall Risk Self-Efficacy), which would increase self-efficacy to perform these behaviors oneself to lose weight (Risk Self-Efficacy for oneself).

Participants: Participants (N = 419) were women ages 18-25, recruited through an online panel (M = 22.48, SD = 2.05). The majority of participants self-identified as Jewish (99.13%), and included women who identified as secular (40.5%), traditional (22.8%), and orthodox (36.7%).

Measures - We created two scales: Risk Self-Efficacy overall: A scale (which formed one factor, with good internal reliability) assessing agreement with the effectiveness of the 6 behaviors for weight loss. Risk Self-Efficacy for oneself: A scale (which formed one factor, with good internal reliability) measuring participants own self-efficacy to perform the 6 behaviors to lose weight.

Design and procedure: Participants provided informed consent and were randomly assigned to view one of the 6 video messages. Videos were of similar duration (3-4 minutes each), and featured the same information, besides manipulated factors. Participants responded to demographic items, and items related to eating disorders. They viewed the message, and completed measures of RSI overall, and RSI for oneself.

Results: Mediation analyses (using PROCESS) showed a significant effect of exposure to RSEI on RSE overall (B = .39, SE = .15, p < .05), which was positively associated with RSE for oneself (B = .17, SE = .03, p < .001). There was also a significant indirect effect of exposure to RSEI on RSE for self, through RSE overall (B = .07, SE = .03, p < .05 (CI95%: .02, .13), supporting our hypothesis.

Results also showed a significant lagged (n = 238, 66% response rate) indirect effect of exposure to RSEI on RSE for self, through RSE overall (B = .07, SE = .03, p < .05 (CI95%: .02, .15). All analyses controlled for BMI, experimental conditions, and age.

Implications: This study provides evidence to support the utility of a new construct and measures for health communication research. Exposure to media coverage of anorexia may inadvertently increase individual self-efficacy to perform weight-loss behaviors among female viewers. This process is consistent with social learning models, but examines its effects from a new perspective.

**Does Social Media Impact Mental Health? Linking Social Media Use with Emotional Experiences in Daily Life**

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Social media are intricately woven into the fabric of daily life. Today, around 70 percent of Americans use social media to connect with one another, engage with news content, share information and entertain themselves (Pew, 2019). However, social media are often blamed for the rise in mental health problems among teens and young adults, leading to increased depressive symptoms (e.g., Twenge, Joiner, Rogers, & Martin, 2018). Yet, the story might be the other way around. Recent studies have shown that individuals are more likely to use social media when they experience stressful situations or elevated depressive symptoms (Zhang, 2017), as evidenced by social media posts about negative emotions or experiences (Bazarova, Choi, Whitlock, Cosley, & Sosik, 2017).

One possible reason for the inconsistent findings is that social media use is largely dynamic, emergent, and deeply intertwined with individual's everyday emotional experiences. Yet, with a few exceptions, research on social media and emotions have neglected the role of the immediate emotional context of social media use. Given that social media function both as a long-term social archive and a "live" platform for social interactions, these uses may produce distinct emotional outcomes (Kaun & Stiernstedt, 2014). Moreover, prior research on social media and mental health has primarily focused on a singular platform, but social media users often incorporate multiple platforms into their communication practices (Boczkowski, Matassi, & Mitchelstein, 2018). Thus, it is important to examine individuals' emotional experiences associated with multiple social media platforms.

This study aims to examine how social media use is associated with individuals' daily mood and stress, as well as longer-term symptoms of depression and anxiety. It maps out the emotional and temporal contexts of social media use and its implications for mental health. A total of 208 participants across the U.S. were enrolled in the study for six weeks. They installed an Android application for monitoring phone sensor data such as app use and an app that sends ecological momentary assessment (EMA) surveys about their current mood and stress three times a day. Participants also reported depression and anxiety symptoms at the outset of this study and in Week 6. We first conducted a content analysis of the 28 social media platforms recorded, categorizing them into social network sites (SNSs) and instant messaging (IM) services. Liner mixed-model analysis was used to examine the relationships between social media, daily mood and stress, and mental health.

The results show that individuals' mood and stress fluctuated greatly on a daily basis. Negative mood and level of stress were positively associated with the intensity of social media use, including SNSs and IM. Moreover, when participants were highly stressed, they were more likely to use a greater number of different social media platforms. This suggests the correlation between emotion and social media multiplexity. However, neither the intensity nor the multiplexity of social media use was associated with symptoms of depression and anxiety over 6 weeks, debunking the negative impact of social media on mental health documented in extant literature.

**Does the Internet Help Older Adults Improve their Experience with Health Information?**

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Does the internet help older adults improve their experience with health information? An analysis of health information accessibility among US adults from 2007 to 2017.

Americans are living longer. In 1900, the average life expectancy of Americans was 49 years. In 2013, it was 79, according to the National Center for Health Statistics. We may be living longer, but not necessarily in better health. Acute illnesses have morphed into chronic ones, and many older adults have multiple chronic conditions to manage and worry about. In addition, over the past 10 years, the population aged 65 and over increased from 37.2 million in 2006 to 49.2 million in 2016 (a 33% increase) and is projected to almost double to 98 million in 2060 (U.S. Dept of Health and Human Services, 2017).

The elderly population, especially those living with chronic health conditions, has a greater need for health information. Digital technology has become an integral part of our daily lives. US older adults can now access health information via laptops, tablets, and mobile phones (Pew Research Center, 2013). Arguably, the amount of health information available to the general public, and ease of access to that information, have never been greater. Yet, not enough studies have tested the impact this increased accessibility and amount of information have had on the health literacy and health outcomes of US older adults. Therefore, this paper examines the evolution of information sources used, trust in those sources, health literacy, and self-reported overall health among older Americans between 2007 and 2017, with the goal of evaluating whether greater access to health information has benefited this segment of the population, or if it has instead exacerbated communication inequalities.

Adopting a longitudinal approach, this study analyzed data from the Health Information National Trends Survey (HINTS) in 2007, 2011, 2013, 2015, and 2017 to identify communication inequalities faced by older adults in the United States and the potential role of the internet in helping older adults' access to and understanding of health information.

Over time, we observed a consistent increase in reliance on the internet as a primary source of health information, particularly for those over 65. General health across all age groups did not significantly improve or worsen over time. Our study revealed a pattern of decreasing effort to access information and diminished feelings of frustration when looking for it among older adults. However, these findings do not necessarily indicate that older people are becoming more confident in accessing health information. Older groups (50+) consistently exhibit lower levels of confidence and greater difficulty understanding health information compared to the younger generation.

These findings suggest that the increased accessibility to online health information does not guarantee improved health literacy in older adults. Interventions aimed at older adults should consider improving their digital literacy to help them navigate a complex information landscape.

# E-cigarettes and Adult Smokers: A Test of Messages Communicating Relative Risk

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Objectives

E-cigarettes have been called a reduced harm product that can potentially ease the public health burden of tobacco if existing cigarette smokers transition completely.[1,2] This plan, however, relies upon smokers actually transitioning, and prior research has highlighted that a growing percentage of adult smokers believe e-cigarettes are as harmful as combustible cigarettes.[3] The purpose of this study is to determine whether (H1) adult smokers who view a relative risk message will have lower risk perceptions than participants who do not view a relative risk message. Additionally, drawing upon the theoretical concept of a "smoking cue," [4] or visual imagery related to smoking use, we tested (RQ1) the influence of including a "vaping cue."

Method

Participants and Design. An online (AMTurk, U.S. smokers) experiment (n = 317) tested the influence of a relative risk message about e-cigarettes (3 message conditions: vaping cue/ no vaping cue/no message) on risk perceptions. In total, 10 participants were excluded from analysis for timing issues, and one for failing an attention check. Most of the remaining 306 adult smokers had tried an e-cigarette (ever-use=272, past30days=140). Other demographic information is: female=171,cacausian=261,M(age)=39.35, SD(age) =11.22.

Stimulus Materials. The relative risk message featured: a toxic-indicator, showing cigarettes in red at the top, no tobacco use in green at the bottom, and e-cigarettes in yellow-green toward the bottom; 2. a reduced exposure statement; and 3. a testimonial and photo of a former-smoker (gender-matched to participant). The version with a vaping cue had misty vapor behind the "toxic-indicator," while the other had just a black background.

Measures. A risk perception scale was developed by averaging the responses to two questions: how risky are electronic cigarettes and compared to traditional cigarettes, is using electronic cigarettes everyday risky for one's health, (1) not risky at all to (4) very risky (M = 2.35, SD = .72, alpha = .89, loads on one component).

Results

As predicted by H1, there was a main effect for message condition on the risk perception scale, $F_{(2, 303)}$ = 3.39, p = .035. In response to RQ1, participants who viewed the relative risk message with the vaping cue (M = 2.24, SD = .68) had lower risk perceptions than those who did not view a relative risk message (M = 2.50, SD = .80), p = .028. Participants who viewed the relative risk message without the vaping cue reported risk perceptions in the middle (M = 2.33, SD = .66).

# Effects of Hope, Fear, and Guilt Appeals on Seasonal Influenza Prevention

## *Amy E. Chadwick, Ohio University*

Emotional appeals can affect health behavior and other persuasive outcomes. However, it is unclear which emotional appeals are most effective for influencing particular health behaviors or persuasive outcomes. Numerous studies compare the effectiveness of emotional appeals to a control condition; however, few studies compare the effects of emotional appeals to each other. Knowing which emotional appeal can best affect which persuasive outcomes for which topics would enable us to maximize the effectiveness of our health messages. Therefore, this study explored the ability of hope, fear, and guilt appeals along with the emotions of hope, fear, and guilt to predict persuasive outcomes related to seasonal influenza prevention.

697 undergraduate students participated in a between-subject experiment with four study conditions: a hope appeal (n = 170), a fear appeal (n = 182), a guilt appeal (n = 169), and a control message (n = 176). Participants ranged in age from 18 to 32 years old (M = 19.1, SD = 1.26). More than half of the participants identified as female (n = 409, 58.7%), most of the rest identified as male (n = 285, 38.3%), and one
participant identified as transgender (0.1%). Most participants identified as Caucasian-American or White (n = 620, 89.0%). When asked whether they had gotten the flu shot this fall, most participants had not (n = 493, 70.7%), some had (n = 167, 24.0%), and a few were unsure whether they had had the flu shot (n = 37, 5.3%).

Results indicate that the fear appeal led to greater intention to cover one's cough or sneeze (p = .018) and to wash one's hands or use hand sanitizer (p = .008). In addition, the fear appeal led to greater interpersonal communication intention (p = .004) and interest in seasonal influenza prevention (p = .047) than the control condition. The guilt appeal also led to greater interpersonal communication intention (p = .009) and interest in seasonal influenza prevention (p = .022) than the control condition. However, the fear appeal led to significantly more anger than the hope appeal (p = .028) or the control condition (p = .023). The emotion hope was the strongest predictor of interest in seasonal influenza, self-efficacy, response efficacy and positive social norms. Both hope and fear were nearly equal positive predictors of interpersonal communication intention, information seeking intention, intention to cover one's cough or sneeze, and intention to wash one's hands or use hand sanitizer.

This study indicates that fear appeals are the most effective message appeal for seasonal influenza prevention. However, the emotion hope is the strongest or equal predictor of persuasive outcomes related to seasonal influenza prevention. Because characteristics of the message topic as well as characteristics of the recommended behavior likely affect which emotional appeal is most persuasive, it is important to continue to test the effectiveness of hope, fear, and guilt appeals in other contexts. This study takes a step toward identifying which emotional appeals and emotions are most effective for influencing persuasive outcomes.

# Effects of Parasocial Relationships and Breakups with Reality TV Characters on Health-Relevant Outcomes

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Previous research and theorizing in the area of entertainment-education (EE; Singhal & Rogers, 1999) and narrative persuasion suggest that EE formats are a promising means for health communication as they can promote healthy attitudes, beliefs, or behaviors (e.g., Nabi & Thomas, 2013; Tian & Yoo, 2015; for an overview see Tukachinsky & Tokunaga, 2016). In this respect, audience members' feelings towards and the involvement with the depicted media characters play an important role for their effectiveness (Moyer-Gusé, 2008). Particularly, (health-related) reality TV shows allow viewers to emotionally connect with the displayed char-acters (Tian & Yoo, 2015), which—over time—potentially fosters the formation of parasocial relationships (PSR; R. B. Rubin & McHugh, 1987). Such relationships enhance attention to and retention of the provided information (A. M. Rubin & Perse, 1987) and eventually promote persuasive outcomes (Tukachinsky & O'Connor, 2017). Notwithstanding such positive effects, the termination of parasocial relationships—due to changes of the plot, discontinuation of the program etc.—can cause emotional distress or a sense of loss comparable to real break-ups (Cohen, 2004; Eyal & Cohen, 2006), which might oppress persuasive outcomes. However, little is known about the effects of these parasocial break-ups on health-relevant behaviors. Consequently, this study aims to investigate the development and impact of PSRs well as the consequences of parasocial break-ups on health-relevant outcomes. Therefore, a quasi-experimental longitudinal field study was conducted. Participants (N=172; $M_{age}$=36.56, $SD_{age}$=8.84; 35% female; wave 7 not included yet) were exposed to five modified and short-ened episodes of The Biggest Loser—a health-related reality TV-show—on a weekly basis. In the first four episodes, the focus of the story was on two characters in order to allow recipients to form parasocial relationships with either of them. At the end of the fourth episode, both characters had to leave the show. The last episode depicted the remaining participants of the show without focus on a specific character. Questionnaires assessed, i.a., the intensity of par-asocial relationships (Hartmann et al., 2008; A. M. Rubin & Perse, 1987), identification with characters (Cohen, 2001), empathy (Shen, 2010), self-efficacy, exercise behavior (Courneya et al., 2006; Godin, Jobin, & Boullion, 1986; Godin & Shepard, 1985). In addition, parasocial break-up distress (Cohen, 2003; Eyal & Cohen, 2006) was measured after the fifth episode. All items were measured on a five-point Likert-type scales.

Preliminary results show that there was no significant general increase of PSRs over time and repeated exposure. However, participants with stronger PSRs showed greater parasocial break-up distress (M=2.81, SD=.94) than participants with weaker PSRs (M=1.72, SD=.56; t(96)=-7.02, p=.000).

Due to the extensive amount of data and the required effort with regard to preprocessing and analysis, further results are still pending. In-depth analyses of the effects of PSR and break-ups on central factors in connection with health information, i.e., perceptions of threat and efficacy, as well as on health-relevant outcomes, i.e., attitudes, exercise behavior, and information seeking, will be presented at the conference. Moreover, these analyses will also include data from the last (7th) wave.

# Employees' Refusals to Participate in a University-Sponsored Wellness Program: Barriers and Benefits to Engagement

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Workplace wellness programs are commonplace today to encourage employees to become healthier (Batorsky, Taylor, Huang, Liu, & Mattke, 2016). Such initiatives consist of activities such as health risk assessments, biometric screenings, smoking cessation, lifestyle coaching, or weight management programs (Claxton, Rae, Long, Damico, & Whitmore, 2018). Though many wellness programs use incentives to motivate employees to engage in healthy behavior, some employees still refuse to participate. One reason for lack of participation is privacy concerns, as workplace wellness programs collect personal health information (Madison, 2016). The present study seeks to understand why employees chose not to participate in a university-sponsored wellness program, and to determine whether perceptions of their own health, efficacy, and organizational resources to promote health vary based on wellness program participation. The current wellness program was initiated at a large Midwestern university in January 2018, giving benefits-eligible employees and spouses the opportunity to earn funds for a health savings account once they list a primary care provider, and complete a physical exam and biometric screening.

Survey data were collected from benefits-eligible employees in November 2018 (N=1,175). Employees were asked if they were a participant or nonparticipant in the wellness program. Those who did not participate completed an open-ended item asking them why they would not participate. All participants indicated their level of agreement with feeling they are in good health, could make better choices to be healthy, and if the university provides helpful resources to be healthy. To analyze the open-ended responses, a thematic analysis approach was utilized. Data were open-coded to identify emergent themes, and then a coding scheme was developed (Braun & Clarke, 2006). Two researchers conducted training, and then coded the responses independently (85-100% agreement) and met to resolve disagreements after each round until 100% agreement was obtained.

Results for why employees chose not to participate in a workplace wellness program indicated seven themes (n=297): privacy concerns (n=129, 43.43%), believing the program took too much time or effort (n=84, 28.28%), the program seeming unfair or not useful (n=61, 20.54%), believing they were already healthy (n=57, 19.19%), perceiving they were not eligible to participate (n=35, 11.78%), needing more information about the program (n=21, 7.07%), or feeling forced to participate (n=15, 5.05%). Results for employees' perceptions indicated participants (M=5.56) and nonparticipants (M=5.54) had no significant difference in perceptions of their own health, with all perceiving they were healthy. Participants in the wellness program had higher perceptions they could make better choices to be healthy (M=5.12) than nonparticipants (M=4.53). Participants in the wellness program also had enhanced perceptions that the organization gave them useful resources to promote health (M=4.67) than nonparticipants (M=3.95).

These findings will allow employers to know how to market their workplace wellness programs to target employees who are reluctant to participate. Messages could be sent to employees addressing privacy, perceptions of health, and time and effort needed to participate. Such messaging may increase the likelihood of employees' participation, which could save employees and employers money, and improve the health of all employees.

# Empowering Women by Targeting Male Leaders: Using an Intersectional Perspective to Increase Handwashing among Sierra Leonean Women

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Handwashing with soap is one of the most cost-effective measures to prevent diarrheal and respiratory infections, yet in Sierra Leone handwashing is a neglected practice (WHO, 2017). In West African families, women are traditionally in charge of food preparation and caretaking of children and sick people (Waterhouse, Hill, & Hinde, 2017); thus, increasing handwashing practice among women can decrease infectious risks. However, due to patriarchic structures, women experience low levels of autonomy and are difficult to reach (Carlson, Kordas, & Murray-Kolb, 2015).

This calls for an intersectional perspective: This concept stems from feminist, antidiscrimination research (Crenshaw, 1989) and has recently become recognized as an analytical tool in health-related research to provide insights into the complex nature of health, power, and identity in human interactions (Bauer, 2014; Gkiouleka et al., 2018). Focusing on power relations, we conducted two studies to develop a handwashing campaign: study 1 investigated women's access to health information and their barriers to handwashing practice; study 2 developed and tested an intervention aimed at empowering women to practice handwashing.

In our first study, we conducted eight focus group discussions with recipients (N=58) and 20 expert interviews with communicators across Sierra Leone and analyzed them with qualitative content analysis. Our findings indicate that despite similar poverty status and low literacy among all recipients, women in rural areas appear to be least exposed to health messages. Due to their low social status, lack of education and money, they have no opportunity to independently access information. Communicators further emphasized difficulties in behavior change programs for women as decisions are generally made by the male household heads.

Acknowledging that rural women cannot be reached and empowered to increase hand hygiene without the involvement of men, we developed a campaign targeting three types of leaders whose influence had been mentioned repeatedly during our first study: religious leaders who are trusted sources of information to men and women; male community elders who are the local law-enforcing body and respected role models; and influential women, e.g. traditional birth attendants.

The campaign was tested in five rural villages with similar characteristics in Sierra Leone, of whom four received various interventions between April and August 2019, one served as control group. A pre- and post-intervention survey with 60 community members in each village and covert observations of handwashing behavior were carried out before and one month after the last intervention. Preliminary results indicate positive behavior changes in all intervention groups. However, change evolved differently and to varying extent: In the two communities with well-respected united leaders women felt socially supported in practicing handwashing and were observed practicing handwashing more often than in the other two.

Exploring access to health information and behavior change from an intersectional perspective has deepened our understanding of the complex power relations and the difficulties of targeting women in a hierarchical society. Even though our study took place in West Africa, our findings holds important lessons for health communication approaches in other countries when targeting migrants from a similar societal background.

**Ending the Stigma: An Umbrella Review of Meta-Analyses on Mental Illness Stigma Reduction Studies**

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Addressing mental illness stigma is an international health priority. According to the World Health Organization (2001), 1 in 4 people will develop a mental illness and recent estimates indicate that the U.S. spent more than $200 billion on mental health treatment (Roehrig, 2016). Research has shown that perceptions of stigma reduces likelihood to seek treatment (Corrigan, 2004; Thornicroft, 2008), endangers patients (Knaak, Mantler, & Szeto, 2017), and diminishes quality of life (Cerully, Acosta, Sloan, 2018). For these reasons, the present study conducted the first umbrella review of meta-analyses of mental illness stigma reduction interventions. Studies were eligible if they were available in English, conducted a meta-analysis, and examined the efficacy of interventions seeking to reduce stigma toward mental illness. A systematic literature review was conducted, which revealed a total of ten studies that were eligible for inclusion. After extracting data, a narrative synthesis (Ioannidis, 2009) was conducted. All but one study had either moderate or high quality. Results revealed that six studies examined the efficacy of interventions seeking to reduce public stigmatizing attitudes and behaviors toward people with mental illness, three studies considered interventions that worked to reduce perceptions of internalized stigma related to mental illness, and one study reviewed both public and internal stigma reduction interventions. For public stigmatizing attitudes, the most effective interventions involved contact and educational approaches. However, neither approach significantly reduced stigma at a follow-up assessment. Mental health training programs (d = .14, 95% CI = .05 to .23, I2 = 48) and multicomponent psychoeducation interventions (d = .13, 95% CI = .59 to .23, I2 = 31) significantly influenced stigmatizing attitudes at follow-up. Results for public stigmatizing behaviors were less clear. Two meta-analyses reported the effects of interventions on reducing stigmatizing behaviors. One meta-analysis reported that contact strategies were most effective (d = .59, 95% CI = .37 to .8, I2 = 64) and that education interventions had the smallest impact (d = .27, 95% CI = .08 to .46, I2 = 72). Meanwhile, the other meta-analysis reported that education interventions (d = .25) were more effective compared to contact strategies (d = .19). At follow-up, only education interventions (k = 6, d = .27, 95% CI = .05 to .49, I2 = 67) significantly influenced behavior. All four meta-analyses looking at internalized stigma interventions reviewed multicomponent psychoeducation interventions. These studies found that effects were small-to-moderate in scope and that they did not persist longitudinally. Our results suggest that both education and contact interventions are effective in the short term, but more programming efforts are needed in order to understand how to improve long term effectiveness. Education interventions were more effective at influencing behaviors, however. There was considerable heterogeneity within internalized stigma intervention studies, suggesting that future research should explore moderators that influence the efficacy of these approaches.

**Evaluating Communication in Patient Room Design: Employing a Multidimensional Framework for Assessment**

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Background: The patient room is the primary site for communication between providers and patients/families within hospitals. Today, private rooms have become the industry standard and have been linked with improvements in patient care, patient and family satisfaction, social support, privacy, and enhanced communication (Nunes de Matos et al., 2019, Ulrich et al., 2008). Although there are a multitude of studies that examine the effects of patient rooms on patients, significantly less research has been done on the effects of these room types on healthcare professionals (Ulrich et al., 2010).

Purpose: This study aims to address several research questions including: What specific attributes of patient room designs are most beneficial to healthcare professionals? What are the implications of these attributes on communication? And lastly, do particular healthcare professionals hold certain beliefs about patient room attributes?

Method: Various patient room designs were analyzed as a cardiovascular service line in an urban, academic hospital moved to a new unit. This study employed a multimethod, pre and post-move, quasi-experimental research design to analyze staff perceptions of various patient room designs, including multibed and private rooms. Qualitative data were collected including fourteen focus groups and one interview among 74 healthcare professionals. A quantitative descriptive content analysis was conducted to reveal if the nature of the focus group statements was positive, negative, or neutral. Analysis of the data was guided by Pati et al. (2009) framework for assessing patient room designs.

Results: Findings indicate three emerging themes from the pre/post investigation that contribute to communication in the patient room: staff efficiency, patient safety, and respect for patient environment. The outcomes found a positive improvement with regard to staff efficiency, specifically as it relates to clearance around the patient bed (provider to provider communication) and access to data (enhanced communication with patient/family). Patient safety was widely discussed and revealed links between visibility and communication, particularly due to the specification of solid wood doors limiting visibility and improved caregiver access to provide patient centered communication. Respect for the patient environment involved auditory privacy, access to daylight, and views of the exterior, all of which contribute to better patient-provider communication. Prior published work by (authors, 2018) employed patient and staff questionnaires to determine that nursing staff and patients preferred the larger, private patient room settings in the post-move study, yet reported lower levels of satisfaction with regards to communication post-move. The healthcare professional groups that offered the greatest depth of information relative to patient room design were the nurse groups, therapists, and interdisciplinary members of the care team station.

Implications: Scholarship in patient room design contributes to our scholarly understanding of the importance of where most communication occurs within hospitals. It is increasingly important to consider a variety of stakeholder perceptions on how patient room configuration may impact communication and care delivery. Although the physical environment is often an invisible factor in communication research, this study provides further understanding of how patient room design affects communication and patient care processes in hospital settings.

# Evaluating the Effectiveness of Chatbots in Health Communication Context

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Chatbots have been embraced as the highly anticipated next step in digital evolution across various disciplines (Dudharejia, 2017). The rich literature on web-based interactivity and emerging research on chatbots have highlighted its potential for improving various communication outcomes due to heightened interactivity, message contingency, and social presence. However, how the perceived human versus bot identity of the virtual assistant influences users' response to the agent and the overall attitudes and experience across different communication contexts remain untheorized.

Research on health communication suggests that users may prefer communicating with an artificial intelligent agent rather than a human agent when the conversation involves embarrassing, sensitive, or stigmatized topics that may induce emotions such as embarrassment and shame (Redston, de Botte, & Smith, 2018; Romeo, 2016; Skinner, Biscope, & Poland, 2003). Moreover, in situations where users' communications with a virtual agent are motivated by emotional venting, human agents may be preferred over chatbots.

To provide much needed empirical evidence and to evaluate the effectiveness of chatbots on enhancing user engagement, information comprehension, and overall communication experience, this study asks: whether the perceived identity of the virtual assistant as a chatbot or a human agent would make a difference in user response across different emotion-eliciting communication contexts (RQ), looking specifically at contexts in which an individual may be angry, embarrassed, or a control condition where no emotional reactions are elicited.

H1: When embarrassment is elicited, user response will be more favorable among those who perceive the virtual assistant as a chatbot.

H2: When anger is elicited, user response will be more favorable among those who perceive the virtual assistant as a human.

A 2 (Virtual assistant identity: chatbot vs. human) X 3 (Emotional elicitation: embarrassment, anger, neutral) experiment was conducted to assess the effect of different emotions on user engagement with a virtual agent on the topic of Human Papillomavirus (HPV). A total of 142 valid data were used for analysis. The results indicate that when embarrassment was elicited, participants wished they talked to a human agent (M=5.74, SD=1.195) than those who interacted with a chatbot (M=3.95, SD=2.30; t(27.074)=-3.01, p = 0.006). However, the perceived usefulness, interaction satisfaction, and attitude were not significantly different between human and bot conditions. When anger was elicited, those who talked with a bot had significantly lower interaction satisfaction than those who spoke with a human (t(50)=-2.63, p=0.011). Additionally, the qualitative analysis of the conversation content showed people are more likely to provide meaningful inputs when interacting with a human than a chatbot.

Overall, despite the increasing importance and popularity of chatbots in computer-mediated communication, people are happier to interact with a human agent than a bot. However, a chatbot has advantages of being capable of carrying out similar interactive experiences with a human agent and more time- and cost-effective.

**Examination of Risk Perception and Sexual Healthcare Seeking Behavior of Male and Transgender Sex Workers in India**

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Background and Purpose:

The purpose of this study is to examine the sexual health belief, risk perception, and decision-making behavior of male and transgender commercial sex workers in India in order to reduce HIV/STI transmission, increase adherence to screening/testing and improving healthcare seeking behavior among this population. Male and transgender sex workers comprise 15% of the sex workers' populace in India. While a significant body of research exists on commercial female sex workers in the field of HIV/STI intervention, scant information is available on male and transgender sex workers. Previous research shows that HIV/STI prevention, treatment, and care programs for male and transgender Indian sex workers are heavily underfunded and fall short of community needs. It is anticipated that the study will help to formulate future programmatic interventions that can cater more effectively to the health needs of the Indian male and transgender commercial sex worker population, contribute to HIV/AIDS risk reduction among this group and increase positive health practices. The study is expected to serve as a pilot study for future funded research of an understudied population.

Methods:

The methodology used for this project was structured and semi-structured interviewing of 38 male and transgender sex workers. Administration of a structured and semi-structured interviewer led questionnaire enabled data collection on several of the research questions. The sex work sites that were visited included neighborhoods in a red light district in Kolkata, namely Sonagachi, which is also the biggest red light district in South Asia. The interviewer also visited the red light area of Sheoraphuli---a town in Hooghly district of West Bengal and the red light district of Kalna, a town in Bardhaman district of West Bengal. Each interview took between forty five minutes to an hour on average. All communication took place in Bengali, the native language of the interviewees. No videotaping or audiotaping was performed. The interview transcripts were translated into English, transcribed and analyzed. The transcripts amounted to 187 pages of translated text. Twenty seven pages of field notes were also recorded. IRB research approval was obtained both in USA and India, and permission was also sought from the state ministry of health of West Bengal and the sex workers' union in Sonagachi, Calcutta.

Results:

The sexual identity of male sex workers in India is fluid, subject to personal interpretation and affects risk perception and sexual health behavior. The interviewed sex workers were aware of the risks of infection HIV and STI from unprotected sex. Yet condom compliance among the interviewees was significantly poor. The slippage and breakage of condoms and non-availability of condoms were the primary reasons rendering condom compliance was poor. This in addition to contextual factors like criminalization, unchecked violence against sex workers and stigmatization significantly hindered safe sex practices. Stigmatization also hindered positive health behavior like testing and screening.

# Examining Conversations Between Parents and Children About Childhood Vaccinations

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Background: Low childhood vaccination rates in the U.S. are associated with outbreaks of serious preventable diseases (Phadke et al., 2016). While some parents choose not to have their child receive any vaccinations, there are also understudied groups who choose to have their child receive some but not all of the recommended vaccinations or to receive the vaccinations on a delayed schedule. Children themselves sometimes play a role in the health decisions parents make on their behalves. There is little documented research on the communication that happens between parents and children about vaccinations and their influence on parents' decisions. Therefore, the objective of this study was to qualitatively explore parents' conversations with their children about vaccinations and to examine how these conversations may differ by vaccination status to inform research on potential differences between those who fully vaccinate their children and those who do not.

Methods: This mixed-method study is part of a larger survey of a national sample of 779 parents with at least one child under 18 (72% female, $M_{age}$=38, 70% Caucasian), recruited through Dynata's opt-in panel. We oversampled participants who reported deviating from the CDC recommended vaccination schedule, resulting in a final sample of 420 full, 134 delayed, 103 partial, and 122 non-vaccinators. Parents were asked whether they had ever talked with their child about vaccinations (closed-ended: yes or no) and then asked to describe the most memorable conversation they've had with their child about vaccinations (open-ended).

Analysis & Results: Most participants reported talking to their children about vaccinations: none (~55%), partial (65%), delayed (72%), full (67%). To analyze the 376 open-ended responses, the first two authors utilized a grounded theory approach to discover emerging themes, and coded responses for theme presence/absence. Inter-coder reliability > $\alpha$=.79 was established on 30% of responses with disagreements resolved via discussion. The following themes were most prevalent in parent-child discussions: 1) Keep child healthy, 2) Prevent serious illness/death, 3) Comfort child, and 4) Vaccines are harmful/dangerous. Full vaccinators reported talking to their children most about how vaccines would keep them healthy (75%), prevent serious illness (71%), and about comforting their child (78.5%). Comparing delayed to partial vaccinators, partial vaccinators more often mentioned keeping their child healthy in a general sense (11.9% vs 10%), while delayed vaccinators more often specifically mentioned preventing serious illness or death (17.3% vs 9.6%); both groups were similar in reporting comforting their child during the conversation (~14%). Interestingly, partial vaccinators were similar to non-vaccinators in talking to their child about how vaccines could cause serious risks/dangers (33% and 38%, respectively).

Conclusions: This study explored the conversations parents and children have about vaccinations. Parents across all vaccine groups share similar conversational themes, however, some patterns differ between vaccination groups. Understanding how conversations between parents and children may influence – and be influenced by – vaccination status may help to inform research on the mindsets of parents surrounding vaccination and identify intervention points to encourage vaccine compliance.

# Examining the Association Between Social Media Use and HPV Knowledge Using Health Information National Trends Survey (2017-2018)

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Background: Human papillomavirus (HPV) can result in several types of cancers among men and women, with ethnic/racial minorities bearing disproportionate burden of disease. The Centers for Disease Control and Prevention has recommended HPV vaccination as a safe and effective method of protecting against HPV strains associated cancers, however, vaccination rates remain low. Research has pointed to the numerous, complex factors that contribute to HPV vaccine acceptance among parents and the potential influence of social media on HPV-related knowledge, which may inform vaccine uptake. Prior studies have examined how online health seeking behaviors contribute to HPV-knowledge disparities and the role of social media on impacting individuals' awareness towards HPV. Fewer studies have investigated the intersectionality of race with other sociodemographic factors that contribute to disparities in HPV knowledge among parents and caregivers.

Objective: This study aims to (1) investigate the association between social media use and HPV-related knowledge specifically among a nationally representative sample of adults with children in the household and (2) explore differences within racial/ethnic groups.

Methods: Data were collected from the Health Information National Trends (HINTS) Survey (2017 and 2018), a cross-sectional, nationally representative survey of non-institutionalized adults in the U.S. Analytic sample comprised of adults with at least one child in the household <18 years (N= 1,549). Multivariate logistic regressions were used to examine the effect of social media use related to health information on HPV awareness and knowledge outcomes. Analyses were further stratified to examine whether associations varied by race/ethnicity.

Results: Of the adults with children in the household, 74.32% were aware of HPV and 72.23% were aware of HPV vaccines. Respondents had higher level of cervical cancer knowledge (82.26%) compared to anal, penile, and oral cancers (32.76%, 28.05%, 29.95%, respectively). A majority of respondents had visited a social networking site (SNS) such as Facebook or Twitter (74.42%), while 21.68% of adults shared health information on SNS, 9.97% had participated in a health-related online forum or support group, and 37.87% had watched a health-related video on YouTube. Weighted, adjusted, multivariate logistic models revealed that respondents who engaged in two social media behaviors had greater odds of HPV awareness (aOR: 2.67; 95%CI: 1.03–6.92), after adjusting for covariates. Those who engaged in two (aOR: 3.13; 95%CI: 1.28–7.62) or three social media behaviors (aOR: 3.93; 95%CI:1.57–9.84), had greater odds of HPV vaccine awareness. Higher social media use increased cervical and penile cancer knowledge, but the association was attenuated in the adjusted model. No significant association was found between race/ethnicity and HPV-related outcomes.

Conclusions: Social media use is associated with knowledge of HPV and HPV vaccine for adults with children in the household. Social media-based efforts can be utilized to increase knowledge of the benefits of HPV vaccination as cancer prevention, which may be a precursor to reducing HPV vaccine hesitancy and encouraging uptake to ultimately decrease cancer incidence rates among vulnerable populations.

**Examining the Necessity of Legislation Mandating Communication about Breast Density**

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Breast density is an emerging public health concern related to the prevention and detection of breast cancer. Breast density is defined as the proportion of breast tissue to breast fat, breasts being "mammographically dense" when there is a greater proportion of tissue to fat. Dense tissue is determined by a radiologist when interpreting a mammogram, as the tissue appears white and can complicate the identification of tumors and other abnormalities.

In an effort to boost the public's knowledge about breast density and encourage women to be more active in their breast cancer prevention, 38 states have passed laws mandating the communication of breast density information within a woman's mammogram lay report. If a mammogram is determined to not show cancer but to have dense tissue present, a block of text is embedded into a woman's mammogram report that tells her while no cancer was found, dense tissue can make it difficult to identify tumors and is associated with increased cancer risk. Then, the notification suggests taking this information to the woman's health care provider and asking what other cancer screening options are available for them. As states pass this legislation, providers and public health officials have voiced concern over the notifications due to their potential to cause anxiety and higher-cost care among women, in addition to there being no clear follow-up for providers who receive this information.

In a quasi-experiment between states with and without breast density notification laws, women likely to receive a notification (i.e., aged 40-50 years who have recently received a mammogram and have no cancer history) (N=190) reported whether they had heard about breast density and from where they had received that information. Most reported never hearing about breast density, with no statistically significant difference between states with versus without notification legislation. Those who had heard about breast density reported hearing about it from health care providers or medical staff, interpersonal sources such as coworkers, family, and friends, and mediated sources such as the Internet and the news.

Then, an experiment was conducted by exposing a similar sample of women (N=540) either to a mammogram report with a breast density notification embedded or a control mammogram report with no density information. After viewing the notification, women reported a greater intention to speak with their health care provider about breast density, greater self-efficacy regarding that conversation, greater worry about breast density, and more accurate knowledge regarding breast density's complication of mammogram interpretation and that other options were available for cancer screening. Women also believed cancer was present, despite the letter explicitly stating no cancer was found.

Taken together, these findings suggest women already know some details about breast density, perhaps in part due to dense breast notifications. However, these data suggest other sources of density information that should be examined, as well as potential negative consequences of feeling worried after reading the notification. This means the legislation continuing to be passed that mandates this communication and encourages patient-provider communication about the topic should be examined more critically.

**Explaining Socioeconomic Differences in Walking App Use with the Technology Acceptance Model in a Population-Based Sample**

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Low socioeconomic status (SES) is associated with a higher risk of non-communicable diseases due to physical inactivity. Lower SES individuals, for example, walk less than higher SES individuals. The wide availability of walking apps presents an opportunity for promoting walking behavior. However, low SES individuals have been shown to use walking apps to a lesser extent. We used the Technology Acceptance Model (TAM) to investigate whether perceived ease of use (PEOU) and perceived usefulness (PU) are related to SES differences in the use of walking apps.

A total of 1,346 respondents who were a representative reflection of Dutch adults completed an online survey in August 2019. They provided information on level of education as a proxy for SES. National guidelines were used to categorize respondents as low, middle, or high SES. Respondents' walking app use status was assessed by asking if they (1) currently used walking apps, (2) previously used walking apps, but had discontinued using them, or (3) had never used walking apps. PEOU and PU were measured with 7 items on a 7-point scale (1 = strongly disagree, 7 = strongly agree) adapted from Davis, Bagozzi, and Warshaw (1989). Examples of items were "How the user environment of walking apps works is easy for me to learn" and "Walking apps are useful for me to keep track of my daily walking behavior".

Analyses showed that low SES individuals were less likely to use walking apps and more likely to have never used apps, $X2(4) = 18.64$, $p = .001$. Walking app use positively contributed to PEOU ($F(2, 1337) = 88.89$, $p < .001$) and PU ($F(2, 1337) = 226.72$, $p < .001$). Non-users scored lowest on PEOU ($M = 4.90$, $SD = 1.41$) and PU ($M = 3.15$, $SD = 1.58$), whereas current walking app users scored highest ($MPEOU = 5.93$, $SD = 0.86$; $MPU = 5.05$, $SD = 1.26$). SES also had a significant effect on PEOU ($F(2, 1337) = 10.99$, $p < .001$), such that low SES individuals had the lowest PEOU of all SES groups ($M = 4.83$, $SD = 1.44$). Furthermore, there was a significant interaction effect between SES and walking app use status on PEOU, $F(4, 1337) = 3.00$, $p = .018$. Among the group of non-users, low SES respondents had significantly lower PEOU ($M = 4.43$, $SD = 1.45$) than middle ($M = 5.01$, $SD = 1.37$) and high SES respondents ($M = 5.37$, $SD = 1.23$). There were no significant SES differences in PEOU within the group of previous walking app users.

Results demonstrated SES differences in walking app usage to the disadvantage of low SES individuals. The findings indicate that PEOU can be a barrier that prevents low SES individuals from using walking apps, but that does not constitute a reason to discontinue app use once started. These findings broaden our understanding of differentiating walking app use patterns across SES populations and address the importance for practitioners to concentrate on making walking apps easier to use, rather than just more useful.

**Exploring the Effects of Reader Comments on Perceptions of Non-Controversial Health Stories**

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*Sisi Hu, University of Missouri*
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Research has shown that user-generated comments can influence reader opinions about health and science news stories (Flemming, Cress, & Kimmerle, 2017; Kareklas, Muehling, & Weber, 2015; Hinnant, Subramanian, & Young, 2016; Zhang & Wang, 2019). For example, in the context of climate change communication, a controversial science topic, the influence of comments on perceived story credibility vary depending on the political ideology of the readers (Hinnant et al., 2016). This paper is original because it examines the influence of comments on perceptions of a story that is non-controversial, relative to topics like vaccination, smoking, or genetically modified organisms. The non-controversial apolitical health topic used in this study is the over-prescription of antibiotics and antibiotic-resistant "super bugs." The overarching question is: Do user comments adjacent to a health news story influence reader reactions to the story itself even when the story is not politically charged?

This study hypothesizes: Comments on a non-controversial story 1) will have an independent influence on audiences and 2) will not interact with political ideology. Engaging with the exemplification theory, this study also asks: How do comments that disagree with the story and contain either anecdotal or scientific evidence affect perceptions of the story and the health issue? What are the combined effects of evidence type and argument direction on perceptions of the story and the health issue?

Adult participants (N = 426) all viewed the same news story about how the over-prescription of antibiotics can lead to antibiotic resistance, with either no comments (control) or one of four sets of comments. The experiment used a 2 (argument direction: supporting vs. dissenting comments) x 2 (evidence type: anecdotal vs. scientific evidence referenced in comments) between-subjects factorial design. For the anecdotal condition, comments referred to evidence of over-prescription and antibiotic resistance from their own experience, their friends or family, or local stories. For the scientific-evidence condition, comments referred to evidence based on studies, scientists, statistics, the CDC, graphs, research, and experts.

Results support the hypothesis that comments have independent effects on the perceived story credibility, story likeability, and risk perception regarding the health issue. More specifically, the combined effects of having comments that disagree with the story's argument and that use scientific evidence to back up those claims significantly reduce the perceived credibility of the story. In line with the second hypothesis, the effects of comments do not interact with the political ideology, but they do interact with participants' intellectual humility (Leary et al., 2017) and scientific numeracy.

This study adds an important and novel dimension to understanding democratic discourse in health and science communication via journalistic outlets. Although audience participation and feedback to the journalistic process were once heralded as a transformative way to get citizens involved with important social matters, evidence continues to grow that user participation can be deleterious to understanding and believability, particularly with health and science content.

# Exploring the Relationship Between Youth Information Behavior, Substance Use, and Substance Use Expectancies

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Information behavior refers to the ways in which "people need, seek, manage, give, and use information in different contexts" (Fisher, Erdelez, & McKechnie, 2005, p. xix). Although health information behavior is a significant area of inquiry in information science, little research in this area has focused on youth information behavior as it relates to substance use specifically. An exception to this is the substantial body of research that has explored the relationship between passive information seeking and youths' beliefs about and use of substances (for a recent review, see Jackson, Janssen, & Gabrielli, 2018). The aim of this study was to examine the association between additional dimensions of youth information behavior (i.e., active information seeking, information needs, and information use) and their self-reported substance use, as well as use-related expectancies (the beliefs individuals hold about the positive and negative effects of substance use).

This study draws from a community-based randomized controlled trial evaluating an online media literacy curriculum for youth focused on substance use prevention. Four-hundred and forty-six participants between 12 and 17 years of age were recruited from 4-H clubs in eight U.S. states. Participants completed self-report measures of their information behavior and their use of and expectancies regarding the following: cigarettes; electronic vapor products; chewing tobacco, snuff, dip, or snus; cigars, cigarillos, or little cigars; alcohol; and marijuana. The analyses presented here include data from two time periods (pre-test and 3-month post-test).

Regression models were conducted to examine the relationship between information behavior, substance use, and substance use expectancies. Information behavior at post-test was negatively related with positive social expectancies on cigarette (b = -0.12, se = .04, p = .001), vaping (b = -0.19, se = .05, p < .001), chewing (b = -0.15, se = .04, p < .001), and cigar (b = -0.18, se = .04, p < .001) whereas information behavior was not related with alcohol (b = -0.09, se = .05, p = .07) and marijuana (b = -0.09, se = .05, p = .06) expectancy variables. That is, youth who had higher information behavior scores had lower positive social expectancy scores (i.e., more negative expectancies) regarding tobacco products. There was no significant association between information behavior and actual substance use.

Notably, the information behavior – expectancy association was observed for tobacco-related beliefs and not beliefs about alcohol or marijuana. Perhaps this reflects more consistent messaging and information related to negative aspects of tobacco products relative to other substances (e.g., the link between tobacco products and cancer). Given the popularity of alcohol experimentation in youth as well as the changing legal landscape of marijuana, it is possible that youth who seek information on alcohol or marijuana are likely to discover positive messages that counter any negative information they may find.

Future research should continue to explore the relationship between youth information behavior, substance use, and expectancies. Establishing a relationship between these constructs would allow for the development of prevention programs that focus on specific aspects of information behavior related to youth substance use.

**Eye Movement Patterns in Response to Sexual Misconduct Awareness Campaign Messages**

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In the U.S., 1 in 5 female undergraduate students may have been sexually assaulted while in college. The actual prevalence of sexual misconduct on campuses may be even higher, as sexual misconduct is underreported. Given the prevalence of sexual misconduct and its psychological and physical effects on victims, the CDC has called for campus-based campaigns to raise awareness, change attitudes and norms, and ultimately reduce misconduct. Potentially promising among those are bystander intervention campaigns, which aim to strengthen recognition of situations, in which someone else may be at risk of being sexually mistreated, and appropriate actions to intervene in such situations.

The present study tests responses to materials from one such bystander intervention campaign. This campaign was launched in 2018 on the campus of a large university in the U.S. The campaign aimed to make undergraduates aware of sexual misconduct on campus and to educate how one can respond when witnessing sexual misconduct.

Specifically, we tested visual attention to campaign posters to determine whether students in fact attended to all visual and textual components of the posters that collectively were thought to produce intended effects. This question of attention to message components is assumed in strategic health communication, but seldom tested. We used eye-tracking technology to test attention to 12 a priori determined poster components, or in eye-tracking terminology, areas of interest (AOI), in a sample of undergraduates (N = 90). Because self-relevance can affect message attention patterns, we compared participants who reported having personal experience with sexual misconduct (n = 36) to those who did not (n = 54).

Each participant saw the same three posters, which were presented in random order. Each poster featured three young people ("bystanders") who looked at the message viewer. Each poster also included an action cue about how to intervene, a slogan ("It ends here"), an information link, and a heading ("sexual harassment stops when you step up"). We examined time to first fixation and fixation duration for each AOI, which resulted in 72 eye movement variables (two eye movement indicators x twelve AOIs x three posters). Multivariate GLM analyses revealed that visual attention patterns were the same across the three posters. Interestingly, after collapsing data across the three posters, we found no clear differences in visual attention between those who had and had not experienced sexual misconduct. In general, participants first looked at the heading or center bystander's torso, followed by bystanders' faces and the action cue. Regarding fixation durations, whereas all important message components were attended, action cues received the most attention.

Were these findings generalizable, then the finding that all key message components were viewed by participants bodes well for the campaign's minimal prerequisite for potential effects on awareness of action responses to sexual misconduct. Equally important, our finding that experience with sexual misconduct did not affect visual attention may suggest that at the very least campaign materials did not alienate those who had been affected by sexual misconduct in terms of tuning out.

# Family Relationships and Health of Incarcerated Mothers: Exploring the Mediating Role of Loneliness

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Incarceration has been linked to poor mental and physical well-being for both inmates and their children (Dolan, Birmingham, Mullee, & Gregoire, 2013; Houck & Loper, 2002; Murray & Farrington, 2008). Research has shown that maintaining significant relationships during incarceration, such those with spouses and children, can help manage emotional distress, reduce recidivism (Loper & Tuerk, 2011; Purvis, 2013), and lower perceptions of loneliness (Segrin & Flora, 2001), the latter of which is linked to a multitude of mental and physical health problems (Hawkley & Cacioppo, 2010). The current study utilizes Hawkley and Cacioppo's (2007) theoretical model of loneliness and health to hypothesize loneliness as the specific mechanism through which incarcerated women's relationships with their children impact their mental and physical health.

Participants were 121 incarcerated women, ages 22 to 64 (M=38.9) who have at least one child (M=2.6). The majority identified as White or Caucasian (n=60) or Black or African American (n=51). Current prison sentences ranged from six months to life (M=23.2), and the average time served toward their current sentence was 5.7 years. Participants completed the UCLA Loneliness Scale (Russell, 1996); Medical Outcomes Study 36-Item Health Survey (Ware & Sherbourne, 1992); Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983); Perceptions of the parent-child relationship (four-item measure created by authors), and the Alabama Parenting Questionnaire (Shelton, Frick, & Wooton, 1996). Although communication between the women and their children was moderate, including phone calls (M=9.2, monthly), written communication (M=3.04, monthly) and e-mails (M=3.21, monthly), perceptions of a positive parent-child relationship were high (M=14.9 on a scale of 4-16), as were perceptions of parental involvement (M= 3.9 on a scale of 1-5).

Four mediation models were analyzed to test the hypothesis that perceptions of a positive parent-child relationship would predict lower loneliness, which would in turn predict better overall health and physical functioning, as well as lower depression and anxiety. As predicted, perceptions of a positive parent-child relationship had a significant indirect effect, through loneliness, on overall health (b=15.45, 95% CI [7.29, 24.05]), physical functioning (b=1.58, 95% CI [.622, 2.72]), depression (b=-.379, 95% CI [-.62, -.16]), and anxiety (b= -.49, 95% CI [-.79, -.20]).

Four additional mediation models were analyzed to test the hypothesis that perceptions of parental involvement would predict lower loneliness, which would in turn predict better overall health and physical functioning, as well as lower depression and anxiety for the women. As predicted, perceptions of parental involvement had a significant indirect effect, through loneliness, on overall health (b=14.39, 95% CI [.550, 27.39]), physical functioning (b=1.45, 95% CI [.049, 2.93]), depression (b= -.36, 95% CI [-.716, -.01]), and anxiety (b= -.46, 95% CI [-.92, -.02]).

Results suggest it is worthwhile to invest in efforts to help incarcerated women sustain quality relationships with their children. As the current study shows, incarcerated women who perceive positive and involved relationships with their children have less loneliness, which predicts better mental and physical health. Beyond benefiting the women, such efforts could reduce health care costs to tax payers and reduce recidivism.

**Fear Before Hope: Assessing the Effect of Emotional Flow in a Youth Opioid Prevention Narrative**

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Background. Every day, 1,600 American teens misuse a prescription drug (Center for Behavioral Health Statistics and Quality, 2017). To combat youth opioid misuse, the Know the Truth anti-opioid website features true stories about young people whose opioid addiction led to extreme acts of self-harm.

Emotions are an essential part of the narrative experience (Nabi and Green, 2015) and are used prominently in the Know the Truth ads. Multiple, shifting emotions may work in concert during the course of a narrative to enhance persuasive effects. Nabi and Myrick (2019) found that feelings of hope assuaged negative reactions to fear and related positively to self-efficacy, a predictor of behavior.

However, health communication researchers have yet to address the sequence of emotions - called emotional flow - evoked during the course of a narrative. We asked whether changing the narrative's emotional sequence would influence the reception of the message. Integrating the extended parallel process model (Witte, 2000) and the emotional flow hypothesis (Nabi, 2015), we posed the following:

- How does the emotional sequence of the Know the Truth narrative effect youth emotional arousal?
- How does the emotional sequence of the Know the Truth narrative effect youth perceptions of opioid risk and efficacy?

We also predicted that both emotional flow conditions (fear to hope or hope to fear) would outperform a static emotional condition on emotional arousal, perceived risk (susceptibility and severity), and efficacy (response and self-efficacy).

Method. We conducted a randomized experiment as part of a larger opioid prevention program disseminated in rural middle schools. After following IRB-approved consenting procedures, students were randomized to one of three text versions of the Know the Truth campaign narrative, "Amy's Story": the original fear-to-hope condition (n=161), a reversed hope-to-fear condition (n=183), or a fear-only (n=171) condition. The sample (n = 480) comprised 140 (29%) White students, 98 (21%) Black/African American students, 199 (41.5%) Hispanic/Latinx students, 7 (1.5%) Asian students, and 35 (7%) students who identified as "other." The sample had 250 (52%) male, 223 (46.5%) female, and 7 (1.5%) identifying as transgender/prefer not to say.

Results. Testing two emotional flow sequences (fear-to-hope and hope-to-fear) of the Know the Truth narrative against a static (fear-only) emotional condition, we found that youth exposed to any emotional flow narrative reported higher levels of hope than those exposed to a fear-only narrative (p<.01). In comparing the two emotional flow conditions, we found that a fear-to-hope narrative elicited higher levels of self-efficacy (p=.03) than the hope-to-fear emotional condition. We did not find significant differences across conditions for response efficacy, susceptibility, and severity.

# Female College Students' Perceptions of Physicians' Implicit Bias

*Rachael Hernandez, University of Missouri*

Minoritized groups in the United States are more likely to experience low-quality health care (Meyer, Yoon, & Kaufmann, 2013; Nelson, 2002; Singh et al., 2017), and health care disparities persist regardless of patients' financial status (Nelson, 2002). One factor exacerbating these disparities is physicians' implicit biases, or the unconscious assumptions based on stereotypes about social groups (FitzGerald & Hurst, 2017; Nelson, 2002). There is growing evidence that implicit bias has the potential to negatively affect physician cognition and decision-making with patients from certain social groups (Blair et al., 2014; Blair, Steiner, & Havranek, 2011; Burgess et al., 2008; Fitzgerald, 2014; Green et al., 2007; Pletcher, Kertesz, Kohn, & Gonzales, 2008; Pletcher et al., 2008; Sabin & Greenwald, 2012). Much of the implicit bias research seeks to capture the hidden and potentially insidious effects of implicit bias, however, there is little information about whether patients are aware of implicit bias and how it impacts their perspectives on physician-patient communication.

Given its' sensitive nature, physician-patient communication about sexual behavior is a critical context for examining physician bias. Physicians have an opportunity to provide accurate and timely information about safe sexual behavior to individuals in their care. However, many young people, and in particularly college women, are reticent to talk to their physicians about sexual behavior. This reticence may be related to perceptions of physicians' communication. Because of their particular sexual health risk factors, this study employs interviews with female college students to explore their perceptions of physician implicit bias and to what extent this perception shapes their interactions with physicians. Qualitative analysis of open-ended interviews was used to explain the way female college students perceive issues concerning physician implicit bias. Due to the private nature of information about sexual behavior, the results of the study were interpreted through the lens of the theory of Communication Privacy Management (Petronio, 2002). Overall, participants described either avoiding or limiting communication with a physician as a result of implicit bias, illustrating how broader social forces shape interpersonal communication in a dynamic process of privacy management. Themes revealed participants' layered experiences of physician bias, particularly how intersectional identity exacerbates experiences of implicit bias and how physician bias is seen as a trigger for the physician delegitimizing the patients' disclosures. Participants also described interpreting physicians' cognitions and emotions in the context of implicit bias. This study provides new findings in the area of implicit bias in doctor-patient communication, introducing a new group of patients who perceive physician biases because of their young age, and suggesting a potential new consequence of perceived implicit bias – a closed privacy boundary. The results of this study show how biases can influence the processes of private disclosures, demonstrating another way that disempowered groups are further disempowered through communication. These findings have the potential to improve communication interventions both for female college students and healthcare professionals.

**Formative Research to Design Culturally-Sensitive Messages about Clinical Trials and Health Registries for Young African Americans**

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African Americans are underrepresented in clinical research (US FDA, 2017). This underrepresentation has dramatic consequences, ranging from researchers' limited ability to generalize the findings to the failure of the healthcare system to provide equitable care (Branson, Davis, & Butler, 2007; George, Duran, & Norris, 2014). More African Americans need to participate, but lack of information and knowledge, misperceptions, and fear prevent many from enrolling in clinical research (Kim, Tanner, Friedman, Foster, & Bergeron, 2015).

Health registries are valuable resources to identify potential participants and may help to bridge participants with open clinical trials (Flood-Grady et al., 2017). To enroll in a health registry, individuals need to complete a questionnaire. While health registries have shown to have the potential to simplify clinical trial enrollment and to collect preliminary health data, they also struggle to engage underrepresented individuals such as African Americans.

The present study aimed (1) to investigate young African Americans' attitudes and knowledge of health registries and clinical trials, and (2) to explore their perceptions about current messages used to recruit participants into health registries. To this purpose, five focus groups were conducted with twenty young African American adults. Participants' mean age was 20 years old, ranging from 18 to 22. The majority of participants were females (n = 15, 75%), not working in a health-related profession (n = 14, 70%), and who had never participated in a clinical trial (n = 18, 90%) nor in a health research study (n = 13, 65%). All the focus groups were moderated by the same researcher and the same note-taker, to ensure consistency. The transcripts were analyzed using thematic analysis (Braun & Clark, 2006).

We found young African Americans have a superficial knowledge of clinical trials. They recognize that clinical trials are important for patients looking for a cure, but they also worry about possible side effects. "I feel like it could go both ways, either positive or negative, depending on if something bad happens to the person, like a reaction, or positive, finding a cure."

Participants identified the lack of alternative cures as a reason to participate in clinical trials or medical research studies. They also indicated the lack of a clear benefit as reasons not to participate. "I've seen on TV shows, oh well, they're doing a trial for the cure of cancer, and someone's really desperate […] but other than that, I don't really see any benefits."

Almost all of the participants had never heard about the existence of health registries, nor they knew what their purpose was. When watching or reading messages about health registries, participants identified some concepts they found obscure and also several changes that should be made to current messages to make health registries more attractive. "It still says it focuses on people's lives so it's not just strictly towards you, it's towards other people. It's like they're using you for other people." Future directions on how to create culturally-sensitive messages for young African Americans about clinical trials and health registries are identified and discussed.

# Framing Mental Illness: Which Pictures Do the Media Draw and What Do Recipients Perceive?

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Mass media are a particularly important source for information about mental health and illness for the public (Borinstein, 1992). However, any media portrayal selects and emphasizes specific aspects of an issue (Entman, 1993). By focusing on "a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation" (Entman, 1993, p. 52), journalists create frames that people use and thereby construct reality. The public, meanwhile, recognizes those frames and makes sense of them through their own preexisting models and personal experiences (e.g., Entman et al., 2009; Gamson, 1995). Thus, the media play a significant role regarding how people perceive mental disorders and persons affected (Dorfman et al., 2005; Gamson, 1995). Research has shown that the mass media rather emphasize the dangerousness and peculiarities of people affected and that they often report in the context of violence and crime (Aragones et al., 2014; Coverdale et al., 2002; Klin & Lemish, 2008; McGinty et al., 2014; Slopen et al., 2007).

To understand the public's communication environment requires not only knowing the existing media frames, but also understanding how members of different target groups perceive the media environment (Wallack & Dorfman, 1996). Therefore, we investigated how German newspapers frame mental illness and how members of the public perceive the media coverage.

Our study focused on the Palatinate region in Germany. We conducted a quantitative content analysis and semi-structured interviews with 44 citizens with different individual connections to mental illness (affected, relatives of patients, not affected). The content analysis included the complete coverage on mental disorders in the year 2018 in three German daily print newspapers (regional, national, tabloid), each with the highest outreach in the Palatinate region. Overall, 478 articles covering mental illness were coded by three trained coders (percent agreement = .90). Media frames were identified by performing a cluster analysis based on the frame elements defined by Entman (1993, pls. see above). This method of media frame analysis – identifying systematic patterns of frame elements – is argued to be more reliable and valid than coding entire frames (Matthes & Kohring, 2008).

We performed a hierarchical cluster analysis using the Ward method and identified five clusters: "Yellow press frame" (n=113), "Crime reporting frame" (n=125), "Elaborated frame" (n=66), "Causation-centered frame" (n=53), and "Solution-oriented frame" (n=121). These frames differ in their thematic focus, whether and to what extent they include causes for mental disorders, solutions, attributions of responsibility, and if negative or positive attributes are used to describe mental disorders.

The media frames partly match the Palatinate citizens' perceptions of media portrayals who notice a focus on crime and celebrity suicides. At the same time, members of the public demand more background information, which are only provided in the identified third media frame. The media frames will be discussed in the light of the perceived media coverage in more detail. By contrasting these perspectives, challenges and options for the development of health promotion efforts particularly focusing on media advocacy can be delineated (Wallack & Dorfman, 1996).

**Framing the Communication of Online Health Stigma: A Multi-Malady Comparison**

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Using Clarke and Everest's (2006) health frames typology (medical [i.e., illness is product of genetics], environmental [i.e., illness is result of structural elements of one's environment], and lifestyle [i.e., illness is result of behavioral choices]), prior research demonstrates an influence of culpability framing on news consumers' perceptions about illness, illness interventions, and those managing illness (e.g., Riles, Sangalang, Hurley, & Tewksbury, 2015). Framing research of this sort has typically focused on the effect of frames on a particular health context (e.g., cancer). Questions remain regarding the generalizability of the influence of such news framing patterns. Various health conditions are known to have disparate connotations with regard to public perceptions about living conditions, onset, culpability, and prognosis (e.g., Lau, Wang, Lau, & Yai, 2014). It is necessary to examine how three health frames which are overwhelmingly represented in health news (Hurley, Riles, & Sangalang, 2014) could be influencing perceptions about illness, and those managing illness, in a number of disparate health contexts.

Specifically, we explore the nature of health frame influence as it relates to news reports regarding alcohol addiction, obesity, and cancer. These illnesses represent the three most prominent health concerns for Americans (Gallup, 2015) that also vary in terms of how they relate to four chief cues for stigma communication (i.e., label, mark, danger, responsibility; Smith, 2007). Each of these health conditions could conceivably be labeled. Obesity is a condition relatively more associated with a mark (e.g., body size). Alcoholism is a condition relatively more associated with being a danger to others. Cancer – associated less with marks and danger – serves as a comparison to our other health conditions and to replicate previous research findings. Clarke and Everest's (2006) frames are employed notably as a manipulation of the responsibility stigma cue.

In a 3 (frame: medical, environmental, lifestyle) X 3 (health condition: obesity, alcoholism, cancer) experimental design, the effect of news exposure is examined via the theoretical framework of the stereotype content model (i.e., warmth and competence perceptions about those managing illness) Additionally, outcomes related to compassion for victims, and advocacy for public interventions are explored. News articles for each health condition were created to be functionally equivalent within the respective frame condition. Pre-testing revealed support for this correspondence. Findings from a Qualtrics panel reveal a number of important ways in which Clarke and Everest's (2006) frames influence perceptions regarding these health conditions, as well as those managing them, in both unique and uniform ways. This research reveals the necessity for journalists to be increasingly vigilant and strategic about how illness is presented on these platforms, given the perceptual ramifications oriented toward those managing health concerns. Further implications for framing research and health news production are discussed.

**Harnessing Anger to Persuade: Combining Offense/Anger Appeals with Retributive Efficacy Appeals to Increase Policy Support**

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For decades, health communicators have designed threat/fear appeals with efficacy cues that emphasize how message recipients can protect themselves from the depicted health threat (Mongeau, 2013). This strategy follows naturally from emotion theory, given that fear motivates protection-related outcomes (Lazarus, 1991). Until now, health communicators have ignored whether persuasive appeals to other emotions (like anger) might benefit from tailoring efficacy cues to match the motivational goal for those emotions (Dillard & Nabi, 2006). This investigation marks an important step forward in this regard. Specifically, it was predicted that the persuasive effects of a message that appeals to anger (termed an offense component) would be enhanced if it is followed by a message that emphasizes how taking action will effectively punish the wrongdoer (retributive efficacy component). This study also examined whether initial attitudes toward the topic would moderate the effects of these messages, as theorizing on persuasion and anger would suggest (Turner, 2007).

Participants were recruited through Qualtrics Panels for a two-wave study. At baseline, participants (N = 1760) reported their initial attitudes toward the issue (industry regulation). Two weeks later, returning participants (N = 717) were randomly assigned to one of two health-relevant contexts (childhood obesity vs. climate change). Within each context, the experiment followed a 2 (offense component: high vs. low) × 2 (retributive efficacy component: high vs. low) + 1 (offset control) between-subjects design. The offense messages manipulated the extent to which [soda/fossil fuel] companies were described as having [targeted young people with exploitative marketing for their sugary products/misled the public about the risks their actions pose for climate change]. The efficacy messages identified several solutions to address [childhood obesity/climate change] with the high retribution versions also conveying how these solutions would hold big corporations accountable for their actions.

Contrary to expectations, communicating retributive efficacy did not strengthen the effectiveness of the offense appeal. This was because the retribution cues provoked defensive responses. Relative to the low retributive efficacy messages, the high versions were more likely to be counter-argued, were perceived as making weaker arguments, and produced greater levels of anger toward the message source. Moreover, moderation analyses indicated that retributive efficacy messaging may polarize audiences who hold the most extreme initial attitudes. Compared to control, the high offense/high retribution message increased support for public policies among pro-attitudinal participants but decreased support among counter-attitudinal participants. Unexpectedly, the high offense/low retribution message (which focused exclusively on how the proposed solutions would tackle [childhood obesity/climate change] and did not include retribution language) promoted policy support (vs. control) regardless of participants' initial attitudes.

These findings suggest that health and environmental communicators should be cautious when using punishment-focused messaging as it may prompt defensive reactions and divide audiences who are favorable and unfavorable toward the message's position. Additionally, these results suggest it is possible for an appeal to anger to persuade counter-attitudinal groups—that is, so long as it provides general efficacy cues instead of retribution-focused cues, which (as discussed) may rub audiences the wrong way.

# "He Acted Out Due to Multiple Concussions": Exploring Health and Race Perceptions of Athlete-Perpetrated Intimate Partner Violence

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Intimate partner violence (IPV) includes sexual, physical, and/or psychological violence by a current or former intimate partner. IPV is a pervasive health crisis impacting people with various socio-cultural and economic statuses (Centers for Disease Control and Prevention (CDC), 2019a). Particularly, incidents involving athlete-perpetrated violence have been inadequately addressed by professional sports leagues, the media, and fans (e.g., Ray Rice, James Harrison, Greg Hardy). Yet, IPV rates amongst relationships involving male athletes tend to be higher than other romantic relationships (Martin, 2017; Washington-Childs, 2018). Likewise, chronic traumatic encephalopathy (CTE), a type of head trauma suffered by professional athletes (especially those engaged in contact sports), is consistently reported by media and attributed to aggression (Meehan, Mannix, Zafonte, & Pascual-Leone, 2015; Morrison & Casper, 2016).

To develop a preventative approach to address this health issue, we must be aware of the ways in which IPV is perceived by the public. In this study, 1500 participants were randomly assigned to view a brief composite news package detailing an IPV incident involving a fictional professional athlete. We manipulated three variables: the perpetrator's race (African American, Caucasian, Latino), sport (MMA, NFL), and the severity of violence (mild/severe). Participants assigned levels of responsibility and the seriousness of IPV as a public health concern. We also asked participants four open-ended questions, "Who do you think is the most responsible for the situation you watched in the news story? Why? Why do you think the suspect in the story acted the way they did? Why do you think the victim in the story acted the way they did?" For the purpose of this study, we conducted an iterative (Miles & Huberman, 1994) and qualitative analysis by coding the four open-ended questions.

As a theoretical framework, we used the social ecological model (SEM), to assess factors that may have contributed to perceptions, particularly focusing on mediated messages in influencing agenda setting at the societal level (CDC, 2019b).

We found that as it related to IPV as a health issue, participants often justified the athlete's violent behavior, perceiving these transgressions to be linked to CTE or another athletic-related physical or mental health injury. Yet, CTE nor any other similar injury was mentioned or eluded to within the news videos. Additionally, related to intersectionality, participants sometimes attributed the behavior to a difference in the athlete's race. We argue that media coverage of these types of injuries can shape perceptions about correlations between CTE (and similar injuries), race, and IPV. From an SEM approach, this has significant implications. The findings shed light on the media's power in influencing perceptions of CTE, race, and its association with IPV, while equally emphasizing the mediated tools at our disposal which have persuasive and instrumental reach, enabling us to engage in preventative strategies to accurately educate the public about this important health issue (Virginia Sexual & Domestic Violence Action Alliance, n.d.). Our research has implications for the study of the intersectionality of race, media, health, and sports issues while adding to the discussion of an SEM approach.

# Health Communication and the Black Church: A Closer Look

*Jeannette H. Porter, University of Missouri*

The growing understanding of health disparities has led to the search for effective means of reaching individual populations in order to combat those disparities. There have been several recent papers exploring the Black Church as an effective outreach site for communicating with African Americans on health topics (e.g., Brewer & Williams, 2019; Harmon, Chock, Brantley, Wirth & Hébert, 2016). Most of these papers treat "the Black Church" as a black box of community influence and African American church leaders as a uniform body of influencers. The proposed interdisciplinary paper/poster suggests that different denominations and congregations have different characteristics which must 1) be elicited and 2) be woven into the design of a health communication campaign through a Black church, for maximum effectiveness.

The proposed paper draws on the author's dissertation and subsequent qualitative research, a thematic analysis of a body of 42 interviews. Key initial findings include:

1)      Among Black Baptists, who are the plurality of African Americans affiliated with religious institutions, each church is nominally led solely by its pastor. However, in reality, each church can be pastor-led, deacon-led or congregation-led. It is important both to respect the absolute leadership role of the pastor and to defer to the actual leadership structure of each church in order to achieve maximum impact from a health communication campaign.
2)      The Black Baptist church operates in in the Biblical, Institutional and Social/Cultural dimensions. Different dimensions are determinative to different target groups within the church. When designing health messages, it is important to understand from which dimension each message emanates and which portion of a congregation is targeted in order to achieve maximum impact from a health communication campaign.
3)      Other Black denominations have different leadership realities, based on their histories and their paths to ordination. This partially explains why caucuses of Black clergy are historically so difficult to maintain and why the same health communication campaign based in the same geographic location can have considerably different impacts at different churches.

Some of the findings above will be examined through a case study of a health ministry at a leading Black Baptist church in a southeastern U.S. city. A draft of an instrument for eliciting various characteristics of a church relevant to health campaigns will be suggested for future testing.

# Health Communication Cancer Screening Messages for Black Women: Review and Recommendations for Future Research

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Health communication strategies have become essential to reducing cancer health disparities (Viswanath & Emmons, 2009). Despite the large and growing literature on health communication to increase cancer screening among African Americans (Adedoyin et al., 2016; Wolff et al., 2003), there have been no attempts to synthesize what is known about cancer screening messaging for Black women. To inform future cancer screening health communication interventions and campaigns, the current review aims to determine what message strategies have been developed and tested for Black women in the extant literature.

The study used systematic review design to gain a comprehensive understanding of what is known about cancer screening messaging for Black women. Six computerized databases were searched in June 2019 to locate relevant studies. The authors developed a list of search terms to encompass cancer, screening, interventions, campaigns, and messages. We kept the search broad to focus on messaging more generally instead of a specific message or cancer type. The initial search yield 7,121 references which were assessed through a systematic detailed strategy. Two coders independently coded all relevant studies on sample, study, and message characteristics.

The final sample consisted of 36 studies published within the past 20 years (1999-2019). Half of the studies focused on breast cancer (k = 20), and the remainder on colorectal (k = 16) or cervical (k = 1) cancer. Sample sizes ranged from 15 to 766 participants. Participants were 18 to 88 years old; however, most studies (k = 26) focused on women 40 and older. All studies used convenience samples. Women were recruited through churches or faith-based organizations (42%), community settings (39%), healthcare facilities (19%), the Internet (6%) and other venues. Most studies (72%) were randomized controlled trials testing interventions with health messaging components; seven studies reported specifically on the formative research process. The health belief model was used to guide several studies (28%), followed by social cognitive theory (14%) and the reasoned action approach (11%). Messages were primarily distributed through small media such as posters and billboards (36%), community-based activities (31%), and videos (28%).

The research indicates a limited range of message design approaches have been utilized. Spiritual/religious appeals (39%) were the primary message approach used with Black women. Other message approaches used ranged from tailoring (30%) and framing (8%) to narrative and/or testimonials (14%). Much of the cancer screening health communication research with Black women were focused on assessing the effectiveness communication channels (e.g., computer tailored vs. print interventions) rather than addressing the specific messages which would motivate women to screen for cancer. Furthermore, there appears to be a dearth of specificity on how cancer screening messages are constructed for Black women; the research to date has made limited use of message design theories to inform their health communication interventions.

Given the increasing incidence of some cancers among Black women, including younger Black women, more research is needed on effective messages to communicate the importance of cancer prevention and screening to those audiences at risk. Message design recommendations will be discussed.

**How and when does Tailoring Change you? An Examination on the Effects of Regulatory Fit in Different HPV Prevention Behaviors**

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Regulatory focus theory suggests that the persuasiveness of a health intervention message increases when it creates an experience of regulatory fit by matching the framing valence of a message with individuals' motivational orientations, namely, regulatory focus (Higgins, 1997; see Ludolph & Schulz, 2015). Specifically, gain-framed messages delivered to the promotion-focused individuals contribute to more attitudinal and behavioral changes than those delivered to the prevention-focused individuals (leading to the experience of promotion-focused regulatory fit), whereas loss-framed messages would be more effective for prevention-focused individuals, compared to promotion-focused people (leading to the experience of prevention-focused regulatory fit; Higgins, 2000).

Consistent with previous persuasion theories, such as the Extended Parallel Process Model (Witte, 1992) and the Health Belief model (Rosenstock, 1974), the effect of regulatory fit increases people's perceptions of threats and efficacy, which, in turn, lead to a higher compliance with message recommendations (Updegraff & Rothman, 2013). However, the empirical evidence supporting these mediation pathways is still limited. Additionally, previous studies yielded mixed results, failing to provide a consistent process concerning regulatory fit effect. Thus, in the present study, we analyzed how the experience of different types of regulatory fit and regulatory misfit (created by a mismatch between the framing valence of the message and individuals' motivational orientations) influenced attitudes and intentions through perceptions of threats and efficacy in two types of HPV prevention behaviors demonstrating different risk levels— consistent condom use and HPV DNA testing.

To test our hypotheses, we recruited 481 female participants through an online recruitment service. In an online experiment, the participants were randomly assigned to one of the two HPV prevention behaviors. Their experiences of regulatory fit or regulatory misfit conditions were manipulated by matching or mismatch their reported regulatory focus with the framing valence of the message (promotion-focused regulatory fit: match between a gain-framed message and a promotion focus; prevention-focused regulatory fit: match between a loss-framed message and a prevention focus; promotion-focused regulatory misfit: mismatch between a loss-framed message and a promotion focus; prevention-focused regulatory fit: mismatch between a gain-framed message and a prevention focus). The model 4 of the PROCESS macro was used for analysis.

The study results suggested that, for the condom use behavior, the experience of a promotion-focused regulatory fit was likely to generate the most favorable persuasion effects through increased perceptions of response efficacy, self-efficacy, and severity, while the experience of a promotion-focused regulatory misfit was the most effective in leading to positive attitude toward HPV DNA testing and stronger intention to receive it every 5 years by generating higher level of response efficacy, self-efficacy, and susceptibility.

These findings contributed to the growing body of regulatory fit research by providing explanations for the conflicting findings in previous studies. The regulatory fit effect is salient only for low-risk behavior. By contrast, experiencing a regulatory misfit facilitated attitudinal and intentional changes in high-risk behavior. In addition, our study supports the mediation roles of threats and efficacy beliefs on both of the two effects.

**How do Cancer Information Seeking, Cancer Fatalism, Cancer Worry, and Comparative Risk Perception Influence e-Cigarette Use?**

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Background: There has been a dramatic growth in e-cigarette use in the U.S. in recent years. E-cigarettes are battery powered devices that simulate the tobacco-smoking experience by delivering nicotine, flavor, and other chemicals in the form of vapor rather than smoke. As e-cigarettes deliver nicotine without burning tobacco, which produces many harmful chemicals, they seem to be safer and less toxic than conventional cigarettes. In fact, e-cigarette cartridges contain nicotine, the substance responsible for causing addiction to tobacco products, and other potentially harmful components (e.g., irritants, genotoxins, animal carcinogens) have also been reported.

Relying upon the expanded conceptual model of health information seeking behaviors (HISB; Longo, 2005), the risk-as-feelings hypothesis (Loewenstein et al., 2001), and findings from extant research, we proposed a model that assumes that cancer information seeking influences e-cigarette use through a series of mediators including cancer fatalism, cancer worry, and comparative risk perception.

Method: The model will be tested by data from the HINTS 5 (Cycle 2), which was conducted from 1/26 through 5/2, 2018. HINTS is a series of national surveys collecting data about the use of cancer-related information by American adults 18 years and older.

Age, gender, ethnicity, health status, education, and income will be included as control variables.

Cancer information seeking was measured by a stem item stating that "Based on the results of your most recent search for information about cancer, how much do you agree or disagree with each of the following statements?" The response items include "it took a lot of effort to get the information you needed."

E-cigarette use was measured by "Do you now use an e-cigarette every day, some days, or not at all?"

Cancer fatalism was measured by a stem item stating that "How much do you agree or disagree with each of the following statements" followed by three items. Sample items include "It seems like everything causes cancer" and "There's not much you can do to lower your chances of getting cancer."

Cancer worry was measured by an item stating that "How worried are you about getting cancer?"

Comparative risk perception was measured by an item stating that "compared to smoking cigarettes, would you say that electronic cigarettes are…" followed by responses ranging from "much less harmful" to "much more harmful."

We will use structural equation modeling to analyze the data.

Anticipated findings:

Participants who have more negative cancer information seeking experiences are likely to have higher cancer fatalism, lower cancer worry, and lower comparative risk perception, which will in turn predict more e-cigarette use.

# How People with Chronic Pain (Do Not) Talk about Pain-Related Uncertainty

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People with chronic pain face chronic uncertainties they must manage through communication. This study investigates uncertainties people with chronic pain (do not) express during conversations with important others. The guiding research question is: How do people with chronic pain talk about their pain-related uncertainties with others? Data will include conversation transcripts and analytic memos based on semi-structured interviews with a projected 40 individuals currently experiencing chronic pain. Participants are currently being recruited via Amazon's Mechanical Turk service and compensated $10US. Data are actively being analyzed using Tracy's (2013) iterative analysis techniques throughout the collection process, guided by sensitizing concepts from Brashers' (2001) uncertainty management theory.

Preliminary results from six initial interviews reveal two emerging themes that highlight how people question if and how they should talk about their pain. The first theme is how social uncertainty frames, and often inhibits, talk about pain: How will my partner respond to my pain? Will my pain burden my partner and our relationship? For example, Dan reports asking himself if his wife is tired of hearing about his pain, and if she is even listening to him. Grinny explains how he hid his pain from his wife for years because he did not want her to "suffer with him." Claire similarly hid her pain for years to protect her sons, but now discusses her pain with her adult son because he lives with her and witnesses her pain. Even so, Claire is hesitant to talk about her pain because she does not want to worry her son. Sam avoids revealing increased pain to his wife if he knows he exacerbated his pain by doing an activity he shouldn't, such as lifting something heavy. When he does reveal increased pain, he expresses uncertainty to frame the conversation (e.g., "It was heavier than it looked") so his wife will be more sympathetic and less critical.

The second developing trend is: when people explicitly talk about pain-related uncertainties, these conversations tend to focus on managing medical uncertainties. They question: What are my treatment options? Will those options even work? For example, Dan, Grinny, and Cory worry about surgeries for their foot, knee, and back, respectively, because doctors have told them surgery could either alleviate or worsen their pain. Claire says her son "hate[s] it when [Claire] goes to the doctors and they give [her] more medicine." Ana's mother recommends holistic therapies like "myofascial release" for her fibromyalgia pain, which Ana admits work, but exchange intense short-term pain for long-term relief. Interestingly, participants appear split between allopathic and alternative medicine for managing medical uncertainty, with multifaceted appraisals of how effective these strategies will be.

These preliminary results point to dual opportunities to encourage open discussion of social uncertainties as they relate to pain, and intervene in discussions about medical uncertainties that produce anxiety for both partners. Final results will extend these practical implications for encouraging open conversations about pain and pain-related uncertainties that facilitate effective coping with chronic pain.

**"I did not want to talk about that with anyone:" Women's Perception of Disclosure of Menarche in India**

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One's menarche (i.e., first menstrual experience) can represent many things in the life of a young woman. In cultures such as India, menarche can signal the transition into adulthood and change of status and behavioral expectations (i.e., changes in bathing, cooking, and rituals of worship). Globally, menstruation is a taboo topic, and this is particularly true within Indian society. Although menarche signals a significant disruption in the lives of young women, Indian women report receiving minimal if any communication with close others (i.e., mothers, sisters, and friends) in advance of menarche and limited information after menarche (i.e., about body changes). The lack of communication likely contributes to the stigmatized nature of menstruation-related communication and can shape their perceptions of menstruation and the likelihood of their comfort in disclosing any symptoms. Thus, the ability to seek information, support, or understanding from others is partially dependent on how young women experience and talk about menarche. To better understand this cultural proclivity to avoid menstruation-related communication, this study examines young women's perceptions of their menarche and corresponding communication.

As part of a larger study, 8 focus groups and 600 paper-and-pencil surveys were collected in which participants responded to open-response items about menstrual experiences. Thematic analysis was conducted using an a priori selected framework, the Disclosure-Decision Making Model (DD-MM; Greene, 2009). Specifically, the information assessment component of the DD-MM assisted in conceptualizing themes. Themes identify how Indian women understand their menstrual experiences, particularly their menarche. The DD-MM describes five aspects of information assessment: (1) stigma (fear of judgment); (2) preparation (belief one may have the illness prior to diagnosis); (3) prognosis (particular health illness/disease implications); (4) symptoms (visible or nonvisible signs of health issue); (5) relevance to others (if health issue pertains to information recipients).

Thematic analysis revealed that during menarche, participants experienced stigma in the form of fear, shame, and embarrassment when they were uninformed about menstruation. Given the cultural climate toward menstruation, prior knowledge reduced but did not eliminate stigma. A majority of participants reported a complete lack of preparation for their menarche, particularly as mothers often did not educate daughters of their impending bodily changes. Participants reported that if they received any pre-menarche preparation, that preparation was limited to how to use sanitary napkins. Many participants experienced uncertainty concerning the severity (or prognosis) of their menarche, questioning if it was symptomatic of the disease. Although participants reported symptoms, or changes to their body, following menarche, it is unclear how symptoms influence disclosure. Finally, participants considered menarche-related information relevant to share with female family members and friends who were viewed as information recipients who could empathize and provide support.

This research provides an initial investigation surrounding menstrual disclosure in India. Study results and implications highlight barriers to menstruation-related disclosure. Future educational interventions may address how participants and members of their social network discuss menstruation, aiming to break the cycle that perpetuates the topic's taboo nature.

**"I'm Willing to be that Woman:" Exploring Black Women's Decisions to Participate in Breast Cancer Clinical Trials**

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Black women die of breast cancer (BC) at a higher rate than any other racial group. Researchers' scientific understanding about this racial disparity, as well as the ability to develop targeted BC treatments for this racial group, is hampered by Black women's well-documented hesitancy to participate in medical research. In this study, we conducted interviews with 14 participants who were Black BC survivors/patients who had participated in a BC clinical trial (CT). In this Integrated Behavioral Model-guided study, we explored participants' attitudes, perceived norms, and personal agency in relation to their decision to participate in a BC CT. Findings about the women's attitudes revealed that despite their often-demonstrated reluctance to be involved in medical research, Black women's strong, altruistic desires to serve others and their communities made them prime candidates for CT participation. In other words, their instrumental attitudes reveal a desire to participate as a way to help themselves and are greatly influenced by the need to leave a "legacy" of better treatment for other Black women. At the same time, while a few participants demonstrated some hesitancy to take unknown or new drugs, most expressed experiential attitudes of feeling safe in their choices. Study results concerning norms showed that despite the Black population's instilled community values, decisions about BC CT participation do not seem to be motivated by a strong injunctive normative influence from friends or family. Most women reported sharing their decision to participate in a CT after the fact. The two strongest normative influences were oncologists and/or their staff members, and patient support groups. From a descriptive normative perspective, most Black women realized their decision to participate in a CT was an unusual one, but overestimated how many Black women they believed did participate in BC CTs. These women expressed strong personal agency when they made independent, informed decisions to participate. Many were proactive in seeking out CTs; in cases where they were recruited into a trial by a medical professional, they expressed clear details about how they independently thought through their decision before agreeing to participate, also suggesting perceived control. This study concluded that Black women actively involved in BC support groups, who have developed trusting relationships with their doctors, may feel more motivated and have higher perceived personal agency about participation in a BC CT. Through CT participation, Black women not only potentially help themselves but also demonstrate care about their racial group and the legacy of helping others, suggesting that altruistic messaging may be particularly salient for this group. Finally, these participants, despite their higher education levels and involvement with many BC support groups, were quite inaccurate in their reporting of descriptive norms about Black women's participation in CTs, suggesting that social norms messaging may be one way to alert other Black women about the continuing disparity in CT participation. Future work needs to explore these findings in the context of CT recruitment messaging and continue to involve and include Black women's voices to improve BC outcomes in research and medicine.

# Identifying Normative Processes in Non-Prescription Stimulant Use Among College-Aged Individuals

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It is estimated that 5 to 35 percent of college-aged individuals engage in nonmedical prescription stimulant (NMPS; e.g., using medications like Adderall without a prescription) use each year. Students perceive improved academic work and outcomes (e.g., greater concentration, better grade performance; Bennett & Holloway, 2017; Wilens et al., 2008), though these claims have minimal medical support. In fact, NMPS use is related to more absences and lower GPAs (Arria et al., 2008; Lakhan & Kirchgessner, 2012). Though some recent efforts have been made to uncover and address such misinformation through campus-based campaigns (e.g., LaBelle, Weber, White, & Hendry, 2019), few campaigns have addressed and successfully reduced normative perceptions surrounding NMPS.

Objectives

At present, little is known about the normative influences on NMPS beyond the Reasoned Action framework – descriptive (who performs) and injunctive (who approves/disapproves) norms (Fishbein & Ajzen, 2010). For example, college students over-estimate peers' use by six-times the actual use rate (McCabe, 2008), and perceive that their peers and parents approve of NMPS, particularly for improving academics (Schultz, Silvestri, & Correia, 2017). This investigation employed Rimal and Real's (2005) Theory of Normative Social Behavior (TNSB) to investigate more nuanced normative elements, specifically, outcome expectations (benefits to self/others, anticipatory socialization) and group identity (similarity and aspirational).

Method

A national sample of 439 young adults (n = 265 college students) completed an open-ended elicitation survey regarding NMPS perceptions. Elicitation surveys generate the greatest potential range of beliefs (Fishbein & Ajzen, 2010) and participants were prompted to identify the outcomes of use, describe "typical" users, and articulate perceptions of groups that endorse both NMPS use generally and specifically to alter academic performance.

Results

Belief statements were examined thematically with respect to the framework of TNSB and applied to each of its components. In addition to responses consistent with previous studies' conceptions of descriptive norms (e.g., Blevins, Stephens, & Abrantes, 2017) and benefits to oneself (e.g., academic performance as cited in Aikins, 2011), some novel normative processes were uncovered, including benefits to others, group identity and anticipatory socialization. A portion of these findings are discussed here. Insights into anticipatory socialization included feeling peer pressured, helping to make friends, or use for rebellion, suggesting that individuals may perceive a potential facilitation in peer socialization and dissociation from other groups (e.g., parental, authority figures) as a benefit of NMPS use. For similar and aspirational groups, many contradictions and discrepancies were illuminated in group perceptions. For example, top responses concerning those most likely to use NMPS included "straight A students," "average" and "low-performing students," as well as "partiers." This may represent varying perceptions among the contexts in which the drugs are perceived to be used which warrants further exploration.

# Identifying Promising Campaign Themes to Prevent Initiation and Continued Use of Flavored E-cigarettes among Young Adult Vapers

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E-cigarettes are now the most commonly used tobacco product among young adults (YAs). E-cigarette products are often flavored, more palatable and often perceived as safe. E-cigarette flavors induce nicotine abuse liability through enhanced pleasurable sensory qualities and reward values, leading to vaping persistence and measures of nicotine use progression among YAs; those more prone to addiction finding ENDS flavoring more appealing. It is crucial to develop effective media campaigns to address misperceptions related to e-cigarette flavors. The current study employed a well-validated, theory-based and systematic approach to provide empirical evidence that informs selection of promising themes addressing issues relevant to e-cigarette flavors targeting YAs.

Given that there exists no established, comprehensive evidence to guide theme selection specifically related to e-cigarette flavors, this investigation started with reviewing of existing scholarship, including the 2016 Surgeon General's Report (SGR) on e-cigarette use among youth and young adults, the 2019 Society for Research on Nicotine and Tobacco (SRNT) abstracts, and a comprehensive search in the Web of Science database (with search keywords "e-cig and flavor" and "flavor and addiction" in the abstracts, resulting a final N = 286 relevant articles). Two coders searched through the literature for information specifically related to flavored e-cigarette vaping. In total, 356 statements related to beliefs or perceptions of e-cigarette flavors were initially extracted (e.g., "If I use flavored e-cigarette products, the vapor of flavored e-liquids can produce asthmatic symptoms in others"). After further combining similar beliefs and categorizing beliefs into larger themes that represent the same underlying construct, we performed principle component analyses to confirm that the sets of individual belief statements intended to measure each of the themes load with other statements in their predicted themes. These procedures resulted in a total of 149 individual beliefs across 18 themes, including "abuse liability," "addiction," "chemicals," "comparative harms with cigarettes," "concern for youth," "cost," "expert opinion," "harm perceptions," "health consequences," "scientific uncertainty," "manipulation of tobacco industry," "nicotine," "packaging," "device safety concerns," "second-hand flavored vapor," "social perceptions (flavored vaping)," "social perceptions (not vaping flavors)," and "other tobacco initiation".

To understand how promising each of the beliefs/themes in preventing YA vapers to not initiate or continue to use flavored e-cigarettes, we recruited a total of N = 719 YAs from a large southeastern university, among which 399 reported past-30-day vaping and were used in our sample for analysis. Following prior practices, we used intention to not use flavored e-cigarettes in the next six months as the focal outcome measure, and potential percentage to gain as the evaluation criterion (which represents the estimated additional proportion of the population who would hold the target intention, if 100% of the population endorse the target belief/ theme and the target belief/theme exerts its optimal influence) [11,12] to examine the relative promise of each individual belief statement and theme category. Results indicate strong support for "social perceptions (not vaping flavors)," "health consequences," "chemicals," "addiction," and "secondhand flavored vapor" being the most promising media campaign themes perceived by YA current vapers.

# Illness Identity and Ongoing Communication: Testing a New Typology

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One-half of U.S. adults cope with chronic illness (Ward, Schiller, & Goodman, 2014). Consequently, researchers have studied illness identity (how a patient incorporates illness into their overall sense of self) and how illness identity impacts communicative behavior. Due to the ongoing nature of chronic illness, these patients often find themselves continually communicating illness-related information over several years (or decades). Extant research mostly explores how people initially decide to disclose illness-related information (e.g. Barned, Stinzi, Mack, & O'Doherty, 2016; Ngwenya, Farquhar & Ewing, 2016). The current study examines how people with chronic conditions continuously communicate about their illness to better understand how they create and maintain illness identities.

Using the Communication Theory of Identity (CTI; Hecht, 1993), this study—the second phase of an exploratory sequential mixed-methods study—employed an online survey to test the Typology of Illness Identity Management Communication (Author, under review), created in the first, qualitative phase. The four-quadrant Typology features two axes, personal illness identity (non)acceptance and relational illness identity (non)acceptance, which create four types: Accepted, Unaccepted, Protected and Ascribed. For example, the Protected type represents the combination of personal illness identity acceptance and relational illness identity non-acceptance. Each type implies unique communication behaviors; therefore, we created a new, 16-item Illness Identity Communication Questionnaire, with each item representing a behavior and four items corresponding with each type. Our research questions were:

RQ1: How does a person's personal illness identity (non)acceptance relate to the behaviors on the Illness Identity Communication Questionnaire?
RQ2: How does a person's relational illness identity (non)acceptance relate to the behaviors on the Illness Identity Communication Questionnaire?
RQ3: Based on the combination of personal and relational illness identity (non)acceptance, how will each behavior on the Illness Identity Communication Questionnaire relate to the Accepted, Unaccepted, Protected and Ascribed types of the Typology of Illness Identity Management Communication?

Participants (N = 252) included adults with any diagnosed chronic illness, recruited in person and via reddit and respondent-driven sampling. We measured personal illness identity (non)acceptance (adapted from Oris et al., 2016) and created a new Relational Illness Identity (Non)Acceptance Scale. We also measured several control variables, such as time since symptoms began, general self-disclosure and illness centrality.

Using Pearson's correlations, results showed that personal illness identity (non)acceptance significantly correlated with 11 of the 16 Illness Identity Communication Questionnaire behaviors (RQ1), and relational identity (non)acceptance significantly correlated with 10 of the 16 behaviors (RQ2). Results of a partial correlation showed that four of the 16 behaviors significantly related to a Typology type—three items with Accepted and one item with Unaccepted—based on their combination of personal and relational illness identity (non)acceptance (RQ3).

Thus, this novel study: (1) fills a gap in existing knowledge by exploring the relationship between two of CTI's identity frames and ongoing illness-related communicative behavior; and (2) introduces and statistically validates a new Relational Illness Identity Scale with six items and two latent constructs. Our Typology, with future examination and testing, could empower patients to better understand illness identity, leading to more fruitful illness-related communication.

**Improving Access to Treatment and Care for Rural Cancer Patients in Kentucky through the Affiliate Liaison Patient Navigation Prog**

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*Susan Reffett, Markey Cancer Center Affiliate Network*
*Stephanie Malicote, Markey Cancer Center Affiliate Network*

Cancer patients in Kentucky, especially those from the rural areas of the state, face many challenges and barriers to quality treatment and care as they navigate the complex health care delivery system. The Markey Cancer Center Affiliate Network (MCCAN) developed the Affiliate Liaison (AL) program in 2017 to provide support and guidance for patients, many from rural, underserved areas of the state, with access to timely, high-quality cancer treatment and services that are not available locally in their community hospitals. Additionally, the Affiliate Liaison plays an invaluable role in fostering trust, empowerment, and engagement with patients, many with deep-rooted social, cultural, and economic disparities. The AL serves as the patient navigator for patient referrals from the 21 statewide hospitals associated with MCCAN. Implementing the AL patient navigation program has proven to have many benefits to patients and their families as well as to the referring providers. This poster highlights the essential and unique role of the AL patient navigator in facilitating improved care coordination, advocacy, and communication, all of which helps ensure that cancer patients successfully navigate the health care landscape and reach better health outcomes.

**Income and Normative Influence on E-cigarette Use among Smokers, Former Smokers, and Non-Smokers: A Multilevel Modeling Perspective**

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*Yuan Wang, University of Maryland*

Objectives of this study:

Vaping is becoming an emerging risk that threatens individuals' health. However, we still have a limited understanding of why people use e-cigarettes, and who are more likely to use e-cigarettes. In addition, it is important to consider both individual-level and community-level risk factors in order to inform interventions on risky health behaviors (Thrul, Lipperman-Kreda, Grube, & Friend. 2014), which did not get enough attention in health communication literature. Therefore, based on a multilevel modeling approach, this study explored both individual-level factors (i.e., income and perceived harmfulness of e-cigarettes) and community-level factors (i.e., collective norms) in predicting individuals' possibility of vaping. Besides, from a multivariate perspective, this study explored whether the underlying factors predicting vaping differ based on individuals' smoking status of traditional cigarettes (i.e., smokers, former smokers, non-smokers).

Research questions:

RQ1: How does income affect e-cigarette usage?

RQ2: How does the effect of income on e-cigarette usage vary across areas with different social norms against e-cigarette use?

RQ3: How do the above relationships different for current smokers, former smokers, and non-smokers?

Methods:

Data from the 2018 Health information National Trends Survey (HINTS) second cycle were employed in the current study. In total, 3504 participants were recruited, including 12.8% smokers, 24.7% former smokers, and 60.8% non-smokers.

Results:

Logistic multilevel regression (i.e., a random intercept random slope model) was used to analyze the data. Income was entered as an individual-level predictor (level1). Collective norm was entered as the cluster-level factor (level2) which predicted the intercept of the model and the slope of income. Perceived harmfulness of e-cigarettes, age, gender, and race were controlled. The result showed that income, collective norm, and their interactions were not significant predictors for smokers and non-smokers. However, for former smokers, higher income was associated with a lower probability of ever using e-cigarettes. And stronger collective norm (i.e., people think that e-cig is more harmful than traditional cigarettes) was associated with a lower probability of ever using e-cigarettes. The interaction between collective norm and income was significant ($\beta = 2.86$, $p<0.05$) such that as collective norm increases, the negative relationship between income and e-cigarette usage attenuated.

# Incoming Medical Students' Attitudes Toward Family-Centered Care

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Patient-centered care is a core competency required of medical students. Students with positive attitudes toward patient-centered care ask fewer biomedical questions and engage in more rapport-building tasks. [1] Patient-centered communication also decreases patient anxiety and increases patient satisfaction. [2,3] Accordingly, medical schools have integrated more patient-centered care curriculum. [4] However, the needs of family caregivers are often overlooked, [5] despite the fact that developing a therapeutic relationship with patients and families is a core competency defined by the Accreditation Council for Graduate Medical Education. [6]

Previous research suggests that students' patient-centered attitudes decline during medical school. [7-9] One explanation for this is the presence of a hidden curriculum that models, and even rewards, behaviors that are not patient-centered. [10] To our knowledge, medical students' family-centered attitudes during medical school and the potential influence of a hidden curriculum on those attitudes have not been explored. Therefore, the goal of the current study is to explore medical students' attitudes toward patient and family-centered care. This investigation part of a larger longitudinal study exploring potential changes in students' attitudes toward family-centered care during medical school.

We administered an online survey to the incoming class of medical students at a Midwestern medical school. The survey included multiple validated measures of attitudes toward patient-centered care [11,12] and family-centered care. [13,14] All scales included a 7-point Likert-type response scale. Students were offered a $10 Amazon gift card for completing the survey.

A total of 166 students (52.4% female; 80.1% White; Mean age = 23.1 years ± 1.8) completed the survey. Students reported very positive attitudes toward patient-centered medical communication (M = 6.50 ± .40) and a patient-centered orientation toward the doctor-patient relationship (M = 5.26 ± .49). Students reported positive, albeit lower, attitudes toward family-centered care (M = 5.07 ± .59). Students value families as a resource (M = 5.31 ± .75) and do not consider them to be a significant burden in patient care (M = 2.98 ± .95). All patient- and family-centered subscales were significantly correlated at the $p < .001$ level.

We explored factors affecting patient- and family-centered attitudes. Contrary to previous research [15], no significant differences emerged based on gender and intended specialty nor under-represented minority status or rural/urban origin. Age was also not significantly correlated with scores on any of the subscales. A significant difference did emerge by student race, but only for attitudes toward family-centered care [$F (3,161) = 2.78, p < .05$]. Students who identified as two or more races reported higher family-centered attitudes (M = 5.58 ± .21) than their White peers (M = 5.03 ± .58; $p < .05$).

Our results suggest that incoming medical students' possess favorable attitudes toward family-centered care. However, their family-centered attitudes are lower than those they report for patient-centered care. Moreover, their family-centered attitudes are correlated with patient-centered attitudes, suggesting that they may be susceptible to the detrimental influence of the hidden curriculum. More research is needed to explore this potential influence, but our results confirm the need to promote family-centered care in medical

**Inconsistent Reporting of Best Practices: Findings from a Health Communication Campaign Process Evaluation Systematic Review**

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Health communication campaign evaluation research has primarily focused on outcome (summative) evaluation to assess programmatic "success," often overlooking process evaluation, broadly defined as evaluation that describes the program, identifies barriers to successful implementation, and systematically assesses whether the campaign was implemented as planned. To standardize methods, researchers suggest evaluating campaign context, reach, dose delivered, dose received, fidelity, implementation, recruitment, barriers, and contamination during campaign process evaluation, but it is unclear if these elements are reported in the literature. This study reports a systematic review of published health campaign evaluation research to identify how best practices for conducting process evaluation are reported. The review included peer-reviewed, English-language published literature on process and implementation evaluation of health campaigns with a media component to examine process evaluation reporting and utility. Using a multi-phased process, three researchers conducted an independent screening of articles, used a consensus-based approach for article inclusion and full-text extraction, and coded articles for process evaluation best practices using checklists developed by evaluation researchers (Baranowski & Stables, 2000; Linnan & Steckler, 2002). A total of 691 unique references were identified, screened, and assessed for eligibility. After full-text examination, 46 (7%) articles published between 1987-2018 were included, the majority (n = 33; 72%) of which process evaluation was the main focus of the article. Among these, the process evaluation elements reach (n = 40; 87%), recruitment (n = 34; 74%), dose delivered (n = 28; 61%), and fidelity (n = 24; 52%) were most frequently reported, while barriers (n = 13; 28%), implementation (n = 9; 20%), and contamination (n = 8; 17%) were less frequently reported. Language used to describe these elements differed across articles as terminology (e.g., fidelity and dose received) were not explicitly stated and had to be inferred using contextual clues from descriptions of measures and results. A majority of articles described methods used to conduct process evaluation activities (n = 44; 96%) and stated process evaluation objectives (n = 40; 87%), however both were reported with varying levels of detail. Only 18 (39%) articles reported how process evaluation results informed campaign implementation strategies. Process evaluation provides insights to researchers and practitioners about mechanisms and intervening variables that could meaningfully impact interpretations of summative evaluations; however process evaluation methods and findings are less frequently included in published literature. This review demonstrates that elements considered best practices for conducting process evaluations are inconsistently reported in the literature. Campaign evaluators appear to either not follow best practice guidelines when conducting evaluations or are making the decision to omit these elements when disseminating findings, both of which are a disservice to the field. Process evaluations have practical implications for health communicators' understanding of how, why, and whether campaigns are effective. More comprehensive and consistent dissemination of process evaluation research methods and results would help to illuminate replicable campaign implementation strategies. Based on this review, we provide recommendations for evidence-based process evaluation components to guide evaluation planning that will hopefully encourage standardized reporting of evaluation efforts.

**Is all Publicity Good Publicity? A Content Analysis of News Coverage Surrounding South Dakota's Anti-Meth Campaign**

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Introduction: Methamphetamine (meth) is a highly addictive stimulant used widely in many parts of the US. Overdose deaths due to meth use have increased in recent years in states such as South Dakota, where the number of people seeking treatment for meth addiction doubled from 2014 to 2018. Spurred by this crisis, the state recently initiated an anti-meth campaign featuring the slogan, "Meth. We're On It." The controversial slogan, employed to increase awareness of South Dakota's meth addiction problems, sparked widespread news media coverage and social media backlash. To understand the content of such coverage, we assessed the valence, or sentiment, of campaign-related news articles. We also examined mentions of the severity of the epidemic, and the provision of information related to meth addiction treatment— two variables that could influence the extent to which the campaign could be said to have fulfilled its goal of generating broader awareness of the meth epidemic.

Methods: We searched LexisNexis for all news documents related to the campaign from November 18-24, 2019, immediately after its launch. The following search terms were used: (south and dakota) and meth and (campaign or ad or advertisement or psa or public service announcement). One coder hand-coded all documents for positive and negative valence toward the campaign, mentions of the severity of the epidemic, and provision of information related to meth addiction treatment. A second coder coded a random sample of 30 documents for the same variables. Using this sample, inter-coder reliability was assessed by calculating the percentage agreement between coders for each coding variable (agreement ranged from 0.87-0.93).

Results: Of the 367 documents produced by our initial search, 111 duplicates were removed. Of the remaining 256 documents, an additional 115 were excluded for containing videos without text, passing mentions of the campaign (defined as fewer than 3 campaign references), unrelated content, and links that did not work. In the final coding sample (n=141), the majority of documents (63.1%) contained mixed (both positive and negative) valence. An additional 25.5% contained only negative valence, while fewer (10.6%) contained only positive valence. The majority of documents (71.6%) mentioned the severity of South Dakota's meth epidemic, however only a small portion (11.3%) directed readers to additional information about meth addiction treatment.

Discussion: Despite the controversial nature of the campaign and the backlash it incited on social media, news coverage of the campaign contained balanced content, with arguments both in favor of and against the campaign. Findings suggest discussion of the campaign did not divert news media attention from discussing the severity of the meth epidemic. Despite the potential for increased campaign awareness, findings suggest news coverage did not generally provide information about addiction treatment, which may be crucial to addressing the prevalence of meth use in South Dakota. Future research will examine the content of campaign-relevant Twitter coverage for a more enhanced understanding of media coverage surrounding the campaign, and an assessment of whether reactions to the campaign differed among the general public compared to news media sources.

# Is Online Health Information Seeking Behavior Associated with More Use of E-Cigarettes? A Moderated Mediation Model

## *Qinghua Yang, Texas Christian University*

Electronic devices have become one of the primary avenues for health information seeking. However, due to the scientific uncertainty surrounding electronic cigarettes (e-cigarettes) and the lack of gatekeeping on the Internet, the online communication environment may not objectively portray the risks and benefits of e-cigarettes. For instance, content analyses documented that e-cigarette-related texts were mostly positive/pro-e-cigarette on websites and social media (Grana & Ling; 2014; Luo et al., 2014). In the same vein, the e-cigarette information seeking of youth and young adults, who are heavy users of Internet and social media, significantly predicted their e-cigarette use six months later, and the information they sought were predominantly pro-e-cigarette (Yang, Liu, Lochbuehler, & Hornik, 2019).

Despite the available empirical evidence, the underlying mechanism and moderator of the relationship between individuals' online health information seeking behavior (OHISB) and their e-cigarette use remain unclear. Given the pro-e-cigarette online environment, a moderated mediation model was hypothesized that the relationship between individuals' OHISB and e-cigarette use is mediated by their lower perceived harmfulness of e-cigarettes, with perceived trustworthiness of online health information moderating the association between OHISB and perceived harmfulness.

The Health Information National Trends Survey 5 Cycle 2 (2018, NCI) was analyzed to test the moderated mediation model, with potential confounders (i.e., age, gender, race/ethnicity, income, smoking status, and health status) being adjusted and sampling weights incorporated in the analyses. The proposed model, tested using structural equation modeling in Mplus 8.2, fits the data very well ($\chi^2(8) = 10.20$, $p = .25$; RMSEA = .013 (90% CIs [.000, .034], CFI = .98, TLI = .96, SRMR= .05). Individuals' e-cigarettes use was negatively predicted by perceived harmfulness of e-cigarettes compared to combustible cigarettes ($\beta = -.30$, $p< .001$), which was further predicted by OHISB for themselves ($\beta= -.36$, $p< .01$), but not OHISB for others ($p= .25$). Consistent with hypothesis, the relationship between OHISB and perceived harmfulness was moderated by perceived trustworthiness of online health information ($p< .01$).

To examine the moderated mediation, bootstrapping with 1,000 iterations was implemented to obtain bias-corrected 95% CIs of the indirect effects (Preacher & Hayes, 2008). The indirect effect between OHISB for themselves and e-cigarette use through perceived harmfulness of e-cigarettes was only significant when individuals show high- (Mean+1SD; .14, 95% CI [.05, .25]) or medium-level (mean; .11, 95% CI [.03, .21]) perceived trustworthiness of online health information. However, when individuals do not trust online health information (Mean-1SD), the indirect effect was not significant (.08, 95% CI [-.05, .22]).

The results show consistency with existing empirical evidence of pro-e-cigarette online public communication environment, which could influence individuals' attitudes towards and risk perceptions around e-cigarette use and validate their vaping behavior. However, critical thinking of online health information could be a protective factor of potential negative effects of OHISB. The divergence of OHISB for oneself and for others in influencing health behaviors was also highlighted. The findings, which inform FDA's regulations regarding e-cigarettes online marketing and misinformation, respond to the conference theme by contributing to the interdisciplinary scholarship of both health communication and tobacco regulatory science.

**Isolated but Overstimulated: Recovery Paradox for Athletes with Post-Concussion Syndrome**

*Joseph McGlynn, University of North Texas*

Concussions present a rising health concern in youth sports. Interdisciplinary perspectives are needed to understand concussions experiences, as the issue of athlete concussions places strain on individuals, families, and the larger health care system. An estimated 3 million concussions occur each year in youth sport and recreation settings (DePadilla, Miller, Jones, Peterson, & Breiding, 2018). The CDC estimates 283,000 emergency room visits each year to treat adolescent traumatic brain injuries (Sarmiento et al., 2019). Concussions sustained at young ages can have lasting negative effects on cognition, impacting athletes' physical, mental, and social health (Colvin et al., 2009).

Enduring a concussion is a stressful process for athletes (Cassilo & Sanderson, 2019), complicated by the need for the athlete to isolate themselves from social peers to avoid overstimulation of the brain during recovery. Effective communication helps prevent injuries in organizational settings (Real, 2010). To improve health communication on the risks of concussions, it is necessary to understand the quality and characteristics of athlete experiences with post-concussion syndrome.

This study examined athletes' described experiences of dealing with concussions and the effects of post-concussion syndrome. Analyzing online narratives of athletes' experiences with concussions (N = 44), we used a social support theory framework to identify and understand key support factors that affect athlete recovery from PCS. We also sought to identity athletes' specific support needs to promote health outcomes. Thematic analysis indicated athletes endure physical, emotional, and social pain during recovery.

During concussion recovery, athletes reported needing ample social support from family, teammates, and coaches. However, athletes also reported the concussions required the avoidance of stimulation to aid recovery. The requirement of isolation to avoid stimulation presents a paradox for athletes seeking to recover from their injuries. They desired support from important peers, but require isolation to avoid setbacks in recovery. Athletes reported the negative effects of overstimulation on their recovery to health from concussions.

Problematic conditions related to athletes' recovery from post-concussion syndrome included themes of isolated but overstimulated, difficulties communicating invisible symptoms, lack of connection with teammates and coaches, and loss of identity during recovery. The results of the current study contribute knowledge to theories of social support and risk communication. Findings inform guidelines for the effective communication of risks of concussions in sport settings. Theoretical implications, practical applications, and future directions are discussed in the context of interdisciplinary health communication research and practice.

**It's the Little Things: Microaggressions & Micro-Affirmations Experienced by Individuals in Recovery from a Substance Use Disorder**

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Microaggressions and micro-affirmations refer to ephemeral, at times unconscious, messages that are anything but 'micro' or insignificant in terms of their potential impact. Sometimes characterized as "minor" slights or snubs, microaggressions subtly convey invalidation, disapproval, and/or bias towards an individual or a group. While not always intentional or explicit, microaggressions can be detrimental to people who experience them (Torino, Rivera, Capodilupo, Nadal, & Sue, 2019). Micro-affirmations, on the other hand, are characterized by Rowe (2008, p. 46) as "tiny acts of opening doors to opportunity, gestures of inclusion or caring." They provide encouragement and convey legitimacy to message recipients. Because microaggressions and micro-affirmations can be verbal, behavioral, or tied to the physical or cultural environment, they are often introduced and reinforced in day-to-day exchanges.

A large body of research exists on the prevalence and potential trauma caused by microaggressions among different marginalized communities and identity groups (e.g., Nadal, 2018; Sue et al., 2007), while research into micro-affirmations has revealed their potential to help others succeed (Molina et al., 2019). Notably, a study by Topor, Bøe, & Larsen (2018) suggested that micro-affirmations have the potential to improve an individual's wellness, specifically individuals in recovery from a substance use disorder (SUD).

This research study focuses on the experiences of this subpopulation, as they face unique challenges in that they must deal with both the chronic nature of an SUD and the pervasiveness of alcohol and other substance use in American society (SAMHSA, 2019a). It investigates the particularities of SUD-related microaggressions and micro-affirmations by collecting and analyzing narratives of recovery and social integration among individuals committed to maintaining a recovery lifestyle (N = 20). There is no commonly accepted and operationalized definition of the term 'recovery' (Laudet, 2007; Borkman, Stunz, & Kaskutas, 2016). This study operationalizes recovery as "a process of change through which people improve their health and wellness, live self-directed lives, and strive to reach their full potential" (SAMHSA, 2019b, para. 2).

Data for this study was collected via narrative interviews and participants were recruited via purposeful and snowball sampling methods. In order to provide a basis for understanding the potential consequences of exposure to microaggressions and micro-affirmations, the study presents a taxonomy of the type of micro-messages encountered by individuals in recovery through a review of the personal narratives.

**Keeping up with the Kardashians' Skin: Skin Cancer Prevention Interventions to Buffer Users from the Negative Effects of Instagram**

*Jessica Myrick, Penn State University*
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Melanoma, the deadliest form of skin cancer, kills nearly 10,000 Americans each year, with rates of melanoma increasing steadily since the late 1980s (American Cancer Society, 2017). Because most cases of melanoma are preventable, researchers have been actively crafting interventions to promote skin health.

One approach to counter-act the problem of skin cancer is appearance-focused interventions. These interventions typically involve showing individuals images of skin damage caused by ultraviolet rays and discussing 1.) the damage to one's appearance caused by UV rays; and, 2.) the socially desirable (e.g., fewer wrinkles or scars) appearance that can be preserved by avoiding UV rays.

While these interventions demonstrate short-term effectiveness, the focus on appearance could prime concerns about not meeting an ideal appearance standard, which could damage self-worth and lead young women to experience appearance-related shame. Telling women that they need to improve their appearance could backfire long-term by motivating them to do whatever it takes to maintain socially rewarded tan-skin norms.

Because of the potential for negative long-term consequences with emphasizing appearance norms, we decided to experimentally compare two alternative skin cancer prevention interventions. Specifically, we examined whether Instagram messages that focus on self-compassion (i.e., be kind to yourself, forgive yourself for past UV exposure, love your skin) and anticipated pride (i.e., imagine how good you will feel putting your skin health first) could produce similar behavioral results without increasing body shame or surveillance behaviors that can tempt individuals to tan. Theories related to emotion regulation and behavior change suggest that self-compassion and anticipated pride can motivate individuals to avoid short-term temptations (tanning) in return for long-term gains (cancer-free skin).

We compared these social media interventions in an ecologically valid scenario whereby Instagram users were also shown pro-tanning content, which is common on these platforms (Ricklefs et al., 2016). Social media use is correlated with tanning behavior (Stapleton, Hillhouse, Coups, & Pagoto, 2016). Therefore, after viewing either an intervention message (self-compassion, anticipated pride, or appearance-focused) or a control message, participants all viewed another Instagram post of a celebrity (one of the Kardashian-Jenner sisters) outside, in the sun, with tan skin. This allows us to test if these interventions could buffer women from negative effects of viewing tan celebrities.

A sample of 630 female Instagram users (ages 18-35) was recruited from a national paid opt-in online survey. Of those, 315 completed a follow-up questionnaire one week later.

Our results revealed that, after controlling for skin type and the perceived amount of sunny weather, individuals who viewed the appearance-focused intervention spent more time outside without sunscreen and more time purposefully sunbathing the week after message exposure than those who viewed the self-compassion, anticipated pride, or control messages. Moreover, a variety of affective and cognitive responses to the Instagram intervention messages partially mediated these results, as demonstrated in a path analysis. In summary, even a very short (single post) Instagram message telling young women their appearance is important can have unintended consequences leading to increased skin harm behaviors.

# Kids and Pets: the Moralizing Effects of Care-Based Moral Appeals in Visual Tobacco Control Messages on Third-Person Regulation

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Background: Attitudes towards health-related behaviors could be moralized by exposure to health messages. Attitude moralization refers to the process by which an individual's construal of an issue, actor, or behavior gradually acquires moral significance—that it the change from "good/bad" to "right/wrong". Moralized attitudes have unique behavioral consequences, one of which is the increased likelihood to engage in third-person regulation aiming to stop another person from engaging in a morally condemned health behavior (e.g., smoking around nonsmokers). In the context of tobacco control, such social interventions are critical to fostering anti-smoking normative influence and facilitating the implementation of smoke-free policies. Drawing on the Moral Foundations Theory (MFT), the current study presents data from a message effects experiment that examined whether visual moral appeals in tobacco control campaigns could moralize smokers' attitudes towards smoking cigarettes, and whether such effects extend to prompt third-person regulation.

Method: A sample of 369 current adult smokers were recruited from Survey Sampling International. In a three-condition between-subject experiment, each smoker was randomized to view six graphic tobacco control messages that employed either care-based (care), purity-based (purity), or non-moral appeals (control). Messages were pre-tested to validate the presence of moral appeals. After all six message exposures, participants were asked to report their degree of attitude moralization towards smoking using an established 5-point scale (1 = strongly disagree and 5 = strongly agree, alpha = .84, M = 2.01, SD = 1.23, e. g., To what extent is your position on smoking cigarettes a reflection of your core moral beliefs and convictions?). Next, they reported their intention to engage in third-person regulation on a 4-point scale (1 = very unlikely and 4 = very likely, alpha = .92, M = 2.34, SD = 0.98). Items include, "If you see a pregnant woman arguing with a smoker who refuses to stop smoking cigarettes around her, how likely are you to step up and help the woman confront the smoker?".

Results: The overall tests for differences between three message conditions were significant for attitude moralization, $F (2, 366) = 3.05$, $p = .048$, $\eta^2 = .017$, as well as for third-person regulation, $F (2, 366) = 3.03$, $p = .049$, $\eta^2 = .015$. Compared with the control condition, exposure to care appeals significantly increased smokers' attitude moralization (b = 0.39, SE = 0.16, 95% CI [0.15, 0.62]) as well as their intention to engage in third-person regulation (b = 0.28, SE = 0.12, 95% CI [0.05, 0.52]). In contrast, effects of purity appeals were not significant. More importantly, attitude moralization significantly mediated the effects of care appeals (indirect = 0.08, 95% CI [0.02, 0.17]) even after controlling for the indirect effects of attitude change.

Conclusion: Care- but not purity-based visual moral appeals were found to further moralize smokers' attitudes towards smoking, which in turn enhanced their intention to engage in third-person regulation. These results represent the first set of experimental evidence in the literature demonstrating the moralizing effects of visual health messages that employ moral appeals. Tobacco control campaigns could benefit from certain moral appeals especially care-based ones to reinforce anti-smoking norms and reduce secondhand harms.

**Labor and Love: A Comparative Study of News Coverage of Doulas and Doula Care in China, Ghana, and India**

*Zehui Dai, Radford University*

News Media Coverage and Understanding of Doula Professionals

Doulas are nonmedical maternal health care workers who provide physical, emotional, and informational support during pregnancy, childbirth, and/or the postpartum period. A doula's role is to help women in labor have safe and comfortable childbirth experiences by centering birthing mothers' bodies and feelings as well as by making sure that laboring women are able to holistically experience the childbirth process (Hunter & Hurst, 2016). Moreover, researchers have found that doula care encourages positive birth outcomes, including the decreased need for medical technological intervention and pain medications as well as lower rates of birth complications.

There is no doubt that news media play an essential role in both creating and influencing cultural norms and social discourse (Dacin, Dacin, & Matear, 2010; Scollon, 2014). From a health communication perspective, there is an association between news media coverage of maternal health issues and public attention towards the issues (Zhang, Jin, Stewart, & Porter, 2016). The authors use a feminist lens to examine discourses about doula professionals and doula care in Chinese, Ghanaian, and Indian news media to (a) explore how cultural notions of women and the status of women manifest in discussions about doulas and doula care, and (b) explain how current portrayals of the doula may be reproducing dominant views about womanhood and women's reproduction. Based on the discussion of existing literature on the topic, the overarching research question guiding this study is: How do sociocultural and medical views about women and childbirth manifest in the discussions about doulas and doula care in the news media?

Method and Preliminary Findings

The comparative analysis follows a "different systems" design (Przeworski & Teune, 1970). The authors look for similarities and differences in coverage across different media systems. Moreover, the authors use qualitative content analysis to study media coverage, defined by Hsieh and Shannon (2005) as "the characteristics of language as communication with attention to the context or contextual meaning of the text" (p.1278). Making the methodology systematic was especially important for this study as it aimed to compare news texts from three non-western countries, China, Ghana, and India (between January 2006 to January 2019).

China, Ghana, and India have complex media systems. They not only differ from one other but each of them is diverse itself. The account of how news media in these nations covered the doula professionals and doula care are thus quite nuanced. The authors identified two similar themes in the news coverages from three nations: the introduction of doula phenomenon, as well as doula support in labor, increased the rate of natural birth. Moreover, the analysis showed that Chinese news coverage of doulas was associated with the second-child policy, and doula care in laboring has become a strategy to force women to have a second child. The Ghanaian news coverage suggested doula care in labor increased the rate of having safe childbirth for women. The Indian news coverage of doula care was associated with political and class discussions.

**Let's Chat: Leveraging Social Media Messaging Apps to Increase Cancer Prevention Behaviors among Vietnamese American Families**

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Group chat applications such as iMessage, WhatsApp and Facebook Messenger are increasingly common platforms used to stay connected among Vietnamese American families. Family group chats can be leveraged as an opportunity for sharing information about cancer prevention, however, there is a lack of research in this area. Late-stage cancer is particularly prevalent among the Vietnamese community and can be prevented through early screening and/or vaccination. This study assessed the feasibility of a 4-week family group chat intervention to increase cancer screening discussions and intent to schedule missed cancer screenings among Vietnamese families. The study aimed to increase cancer screening for two cancers prevalent in the Vietnamese community: colorectal and cervical cancer. Secondary outcomes included increasing family acceptability and comfort discussing cancer prevention. Using a lay health worker outreach model, a young adult family member was trained as family health advocate (FHA) to introduce cancer prevention messages into family group chats. The Health Belief model guided design of cancer screening messages shared with family members. Cultural grounding guided the intervention approach to having family members adapt and co-create cancer prevention messages. Ten families and 31 individuals participated in the intervention. Themes that emerged from analyzing screen captures and exit interviews with FHAs included: (a) the occurrence of cultural brokering in family group chats (e.g. young adults helping older adults navigate the American health care system and translating the meaning of cancer screening information), (b) communication accommodation (e.g. using simple language to explain medical information), and (c) differing levels of family engagement. After the intervention, 42% of participants self-reported having received at least one of the recommended screenings; 83% reported intent to schedule CRC, Pap test, or HPV vaccination; 61% reported discussing cancer screenings with people outside of their group chat; 84% felt comfortable discussing screenings with family; and 68% agreed that the group chat discussions helped their family feel more comfortable talking about cancer screenings. The majority of family members responded positively and were engaged in group chat conversations. Family members conveyed the intervention made them feel closer to their family and helped open a discussion about cancer prevention that was not previously openly discussed. Challenges to implementing the intervention included: (a) sustaining conversations, (b) finding the ideal time of day to share messages (c) navigating family dynamics and cancer prevention conversations, (d) explaining medical details, and (e) engaging all family members. Study findings indicate that implementing such a family group chat intervention is feasible and shows promise as a complementary strategy for increasing cancer screening in addition to physician recommendation. Lessons learned include: (a) limiting cancer screening discussions to one cancer type, (b) limiting group chats to similar age groups, (c) preparing for varying family group chat dynamics when multiple generations are involved, and (d) presenting cancer screening information using a range of engagement strategies such as polls/myth busters, video stories, and personalized voice messages.

# Let's Talk About Sex: Exploring Sexual Communication and Use of Sexual Health Resources on a Catholic University Campus

*Katherine L. Grasso, DeSales University*

Researchers have assessed how communication with friends, peers, and parents about sex impacts sexual behavior. However, while communication between sexual partners is related to safer sex, less attention has been paid to understanding the conversations that occur within sexually active dyads. Further, research about conversations regarding participants' desires, needs, and boundaries is scarce. Safer sex can also be fostered by the use of resources, but certain environments (i.e., religious campuses) may not offer resources or be conducive to encouraging use of those resources. This study, which focuses on students on a religious campus, aims to 1) better understand the extent of communication between sexually intimate partners, and 2) measure individuals' use of on and off-campus sexual health resources.

A sample of students (N = 666) from a small, Catholic, liberal arts college was surveyed online about their most recent sexual encounter and partner. Students described their relationship with that partner, as well as the specific behaviors and use of protection. Participants also answered questions regarding sexual communication with their partner, including their comfort discussing their sexual desires and needs, establishing sexual boundaries, discussing sexual exclusivity, and talking about STDS, birth control, and condoms. Students' use of both on and off-campus resources for emotional or physical support related to their sexual behavior was also measured.

Overall, 78.5% of students reported ever engaging in any type of sexual contact, and 57.5% reported engaging in some form of penetrative sex. Among the sexually active participants who did not have penetrative sex, 40.7% were in casual partnerships and 59.3% were in committed partnerships. Among participants who had engaged in penetrative sex, 28.3% did so with casual partners and 71.7% did so with committed partners. Use of protection during penetrative sex was relatively common, especially during vaginal sex (59.3%) and anal sex (75%). However, it was much less common during oral sex, during which only 1.8% reported using protection.

Overall, rates of communication were high. As predicted, after controlling for the influence of age, race, gender, sexual orientation, and religiosity, rates of communication were higher among those in committed relationships than those in casual relationships. Additionally, when compared to those who did not engage in penetrative sex, those who engaged in penetrative sex communicated with their partner more.

Less than half of the students reported using any type of resource regarding their sexual health. A significantly larger proportion of respondents reported using off-campus resources (48.7%) than on-campus resources (12%). The most common off-campus resources were students' family doctors and parents, while the most common on-campus resources were the health center and the counseling center.

It is reassuring that both those in committed relationships, as well as those engaging in riskier sexual behavior were more communicative with their partners. However, because casual sex is so common on college campuses, researchers should continue to explore how to foster meaningful conversations between sexual partners, promote self-advocacy regarding boundaries and desires, and increase the use of both on and off-campus resources.

# Leveraging Listicles (List Articles) to Educate Young Adults about the Harms of E-cigarettes

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Background. E-cigarette use has significantly increased among young adults. Increases in use are partially attributed to misperceptions about the harms of use. One novel approach to increase positive reception of e-cigarette education is to leverage the popular list-article format, or listicles, that abounds on the internet. Listicles are structured to increase information processing (cognitive elaboration) necessary to influence knowledge, beliefs, and behavior. Listicles condense complex information into easily processed, discrete facts, sometimes with a humorous tone. This format likely requires less conscious effort to understand, which may allow readers to more easily systematically process and internalize new information. We sought to determine whether listicles – with or without humor – influence e-cigarette education and willingness to use c-cigarettes.

Methods. A national convenience sample of 362 US young adults ages 19-35 (M=27.60, SD=3.73) completed an online experiment in July 2019. We randomized participants to one of four conditions: humorous listicles, non-humorous listicles, standard paragraph articles, or no-article control. Participants in article conditions rated two different articles about e-cigarette harms within their condition structure in a random order. Participants in the conditions with articles rated their cognitive elaboration (systematic and heuristic processing) and perceived credibility of each article. All participants then reported their e-cigarette beliefs, knowledge, and willingness to try e-cigarettes. We conducted analyses of variance (ANOVAs) with Bonferroni-adjusted post hoc analyses to examine the impact of article format on all outcomes.

Results. Compared to the no article control, non-humorous listicles led to greater knowledge, beliefs about e-cigarette harms, and lower willingness to use e-cigarettes, all p<.001, d=.56-.71. Humorous listicles also led to more knowledge, p=.026, d=.42, than the control. The standard paragraph articles led to greater beliefs, p=.046, d=.32, but not knowledge, when compared to the no article control. The article formats did not differ for knowledge, beliefs, or willingness to use e-cigarettes, but there were differences for message reception. Participants reported greater systematic processing and perceived credibility for the non-humorous listicle compared to the humorous listicles, p=.028, d=.36 and p=.015, d=.47, but neither listicle format differed from the standard paragraph articles. Heuristic processing was not different among the article formats (listicles vs. paragraph).

Conclusion. Providing novel e-cigarette information in curated "chunks" of information, or as listicles, has promise to increase intended message reception (processing and credibility), knowledge, beliefs, and lower ones' willingness to use e-cigarettes. Humor should, however, be avoided, as it detracts from perceived credibility and readers' willingness for effortful processing among young adults. Future studies could examine if humor is better received among adolescents. Our findings suggest an often-used Internet message strategy to put new information in lists is a promising tool for e-cigarette education to discourage use.

# "Lifestyle Champions" for a Localized Pre-Diabetes Awareness Campaign

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National diabetes prevention campaigns often fail to connect with underserved populations when they overlook some unique needs and lived experiences of local communities. Also, these campaigns often ignore pre-diabetes even though it is a critical time period when people can make lifestyle changes to prevent or delay Type 2 diabetes. Community based participatory research (CBPR) can address barriers to effective pre-diabetes communication by providing pathways for meaningful health message creation for target populations. CBPR is a collaborative approach to research that values equitable participation of audience members and researchers. Thus, CBPR acknowledges intersectional experiences of chronic disease, everyday life, and barriers to change. Using CBPR, we worked with a local community, created "lifestyle champions" among residents, and partnered with local groups to design health messages that increased awareness about pre-diabetes and local lifestyle change programs. We offer lessons learned from this pilot project in which researchers partnered with residents and groups to access community member feedback about messages, sources, and channels, and to steer localized efforts for a statewide pre-diabetes awareness campaign.

The U.S. Centers for Disease Control and Prevention (CDC) funded the pilot study. Goals of this pilot included: 1) increasing awareness/knowledge of pre-diabetes and diabetes risk, and 2) increasing self-efficacy for lifestyle changes among residents of Southern Maryland, and 3) promoting the CDC's Diabetes Prevention Program. A county health department was a central partner for the pilot project: roughly 12.3% of adults in the county have diabetes, a rate higher than both the national and state averages. The county has some of the highest proportions of racial and ethnic minorities, immigrants, and Medicaid enrollees. These residents experience a range of health disparities and, while often aware of diabetes, almost wholly unaware of pre-diabetes diagnoses and lifestyle changes that can reduce their risks of developing diabetes. The pilot project considered the wide range of experiences and identities of target community members by looking to them to develop meaningful health messages.

The project demonstrated the process for and value of creating "lifestyle champions" among residents to help access groups such as local churches, civic associations, senior citizen groups, and community health organizations. The champions worked with researchers to provide outlets for resident feedback for message design, source, and channel selection. Researchers and residents together adapted CDC information into a toolkit of materials and then met with groups to consider effective, localized messages. Critical factors for this community included age, family obligations, food access, residence, income, and insurance. Details such as font size on printed materials, format/number of brochure pages, appeal, and level of risk emerged from conversations. Other characteristics of CBPR were implemented, including: building on the strengths and resources of the community; finding areas of mutual benefit for researchers and local champions; and giving up "power" and voice in order for champions to have agency in the process. Unexpectedly, this pilot also generated several new partnerships with community groups, which will help the county health department in future campaigns that will require a CBPR approach to design.

**Losing Ctrl of Relationships: The Impact of Technology use on Provider Credibility, Nonverbal Immediacy, and Patient Satisfaction**

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Rationale: The use of technology during patient-provider interactions has increased in an effort to make healthcare more efficient. While technologies such as electronic health records allow patients to have easier access to their own healthcare, healthcare providers have recently received criticism for their perceived lack of time and attention to their patients. The purpose of this study was to analyze how technology use in a medical interaction affects aspects such as communication behaviors, patient satisfaction, perceived quality of care, credibility, and provider immediacy.

Method: This study uses a quasi-experimental survey design. The author wrote a script and two actors performed the scene, once with the provider using technology and once with the provider using traditional pen and paper. Participants (N = 227) were shown a video of a patient-provider interaction with either a provider using pen and paper or a laptop during a patient exam and then asked to rate provider communication behavior and provider accommodation, credibility, nonverbal immediacy, and quality of care and patient satisfaction. The majority of participants were female (n = 169) and Caucasian (n = 195).

Results: Mean differences suggested that participants who saw the provider using pen and paper rather than a laptop scored the provider higher in all categories. The results of the t-tests suggest that there were significant differences in nonverbal immediacy between providers who use pen and paper and providers who use a laptop ($t(225)=3.90$; $p<.01$). Specifically, nonverbal immediacy behaviors related to eye-contact were significant: looking at the patient ($t(225)=6.23$; $p<.01$) and the extent to which a physician looked elsewhere ($t(225)=4.32$; $p<.01$). Physician accommodation was also significant ($t(225)=2.64$; $p<0.1$), while expected communication behavior approached significance ($t(225)=1.83$; $p=.07$). There were no significant differences between groups in credibility, ($t(225)=1.23$; $p=.22$), including expertise ($t(225)=1.27$; $p=.205$), trustworthiness ($t(225)=1.09$; $p=.28$), and goodwill ($t(225)=1.23$; $p=.22$). There were no significant differences between groups for quality of care ($t(225)=1.40$; $p=.16$) or patient satisfaction ($t(225)=1.87$; $p=.06$).

Implications: Although nonverbal immediacy and provider accommodation were the only significant variables, mean differences suggested that providers who use pen and paper are rated higher across the board. These results suggest that patients are especially attuned to providers who show accommodating behaviors such as listening skills and politeness, and present immediate behaviors that are associated with physical nonverbals, such as smiling and eye-contact. The results suggest that the patient-provider relationship is more than just a passive relationship. Patients want to feel understood, respected, and listened to by a provider who is kind and caring. While previous research has had a difficult time deciding what the role of a provider should be in a patient's life (Conlee et al., 1993; Sobczak et al., 2017), this study suggests that patients want a trustworthy relationship with providers who embody accommodating behaviors. Technology use in the patient-provider relationship is still uneven, leaving room for providers to learn to use multiple forms of technology in order to be comfortable using accommodating and immediate behaviors with patients while effectively using laptops, EHRs, and other technologies during patient appointments.

# Managing Hearing Loss Stigma: Perceptions of and Responses to Stigmatizing Attitudes & Behaviors

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According to Goffman (1963), stigma results from society's categorization of an individual, based on a negative evaluation of his or her differences, that identifies such individual as weak, dangerous, bad, or not normal. Attributes that may cause societal devaluation include disabilities given that individuals with disabilities, such as hearing loss, do not fit into the able-bodied mindset that is prevalent in U.S. culture (Davis, 2005). The differences in this population's attributes result in a negative stereotype when society labels individuals with disabilities as "less than human" or as having a 'dis'ability (Braithwaite, 1991; Goffman, 1963). Studying this population and the effects stigma may have on communication is essential given that 12.8% of the U.S. population reports having a disability (Kraus et al., 2018). Moreover, Meisenbach (2010) argues that understanding stigma from the perceptions of stigmatized individuals themselves is important to further understanding of identity formation and stigma management theorizing. Thus, this study attempts to understand how individuals with hearing loss, as one population of individuals with disabilities, perceive and experience stigma surrounding hearing loss as well as how they choose to respond to such stigma. As a hard of hearing individual, the primary researcher fit into the population being studied and was able to engage in interactive interviews with thirty participants (Ellis et al., 1997). This differentiates this study from much of the current disability research given that much of this research is conducted from an able-bodied perspective (Matthews & Harrington, 2000). The audio-recorded interviews were transcribed and analyzed using open and axial coding to identify themes across the interviews, which were co-coded and member-checked in order to ensure trustworthiness (Lindlof & Taylor, 2002). The resulting themes included five major types of stigma or stigmatizing attitudes surrounding hearing loss (RQ1) – feelings of sorry or pity, not feeling worth others' time, being labeled as 'not normal', the perception that hearing loss limits capabilities and intelligence, and the idea that hearing loss is different from other types of disabilities. These results support other interdisciplinary findings on individuals with disabilities that highlight that this population often experiences feelings of inferiority (Cherney, 1999; Levy, 2002), isolation (Davis, 2007; Hole, 2007; Wright & Rains, 2013), and being defined by their disability alone (Braithewaite, 1991; Goffman, 1963). Additionally, participants identified six types of responses they typically engage in when confronted with stigma (RQ2) – avoiding/ignoring, asserting oneself, viewing it as an education opportunity, seeing stigma as the other person's problem, having a positive attitude, and making stigma a positive thing (turning it around to their advantage). These responses further support various coping mechanisms (Martin et al., 2002; Shih, 2004), disclosure strategies (Charmaz, 1991), and reactions to stigma (Crocker et al., 1998; Gagne et al., 2009; Major & O'Brien, 2005; Meisenbach, 2010; Southall et al., 2010; Steele et al., 2002) identified in across literature examining stigma in multiple disciplines.

**Marijuana Information Sources, Confidence in Marijuana Knowledge, and Objective Marijuana Knowledge among College Students**

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In recent years, marijuana use on college campuses became the highest while the perceptions of risk and social disapproval became the lowest since early 1980s (Schulenberg et al., 2018). Coinciding with the attitudinal and behavioral trends is the proliferation of misinformation about the safety and benefits of marijuana use, which affects young people's attitudes and behaviors (Park & Holody, 2018). In risk behavior research, the relationship between knowledge and behaviors remains unsettled (Rock, Ireland, & Resnick, 2003), although confidence in knowledge, a metacognition about knowledge, has been consistently and positively associated with risk behaviors (Jaccard, Dodge, & Guilamo-Ramos, 2005). The current study was conducted to identify college students' marijuana information sources and explore the relationships among the sources, confidence in marijuana knowledge, and objective knowledge. Students on a campus located in a recreational marijuana-legal state were recruited and 249 survey responses were analyzed.

Based on a factor analysis of various marijuana information sources, four groups were identified: parents; siblings; peer/media; education/science. Peer/media sources including friends, the mainstream media, websites, and social media were considered the most important by the largest number of students and used the most frequently to obtain marijuana information. Parents including grandparents and uncles/aunts were considered as the important by the second largest number of students and yet used less often than siblings. Education/science sources including school, teachers, counselors, healthcare providers, public health authorities, and scientific research-based sources were considered the most important by the third largest number of students and yet consulted the least often. Siblings, although considered the most important by the smallest number of students, were consulted more often than parents or education/science sources.

Students who considered peer/media as the most important sources exhibited higher confidence in their marijuana knowledge than others. Further, information seeking and scanning from the four groups of sources was all related to higher confidence in knowledge. On the other hand, students who answered education/science sources as the most important were more knowledgeable about the health effects of marijuana than others. Marijuana information seeking and scanning from parents, siblings, and peer/media sources—but not education/science sources—was all related to lower health knowledge. Information seeking from siblings was related to higher law knowledge. When the relationships among information sources, confidence in knowledge, and health knowledge were explored, higher confidence in knowledge predicted lower actual health knowledge while also predicting higher law knowledge. At a marginally significant level, importance of education/science sources contributed to higher health knowledge and importance of parents and siblings contributed to higher law knowledge.

This study revealed college students' over-dependence on peer/media sources and under-utilization of education/science sources. The negative relationship between confidence in knowledge and health knowledge and the positive relationship between confidence and law knowledge are parallel to the findings of an earlier study where non-users exhibited higher marijuana health knowledge and users exhibited higher law knowledge (Bull, Brooks-Russell, Davis, Roppolo, & Corsi, 2017) and thus deserve more attention in futures studies.

# Mechanisms of Opioid Stigma Communication: Examining the Impacts of Stigmatizing News Articles about People Who Misuse Opioids

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The United States is in the midst of an opioid crisis. Since 1999, nearly half a million people have died as a result of opioid overdoses (CDC, 2017). The opioid epidemic has been fueled by several culprits, including prescription opioids, like Oxycontin and Morphine; synthetic and illicit fentanyl; and heroin. Recent efforts to curb opioid overdose deaths include policy changes to make Naloxone, or Narcan—a life-saving opioid overdose response drug—more publicly available. The push for rehabilitation programs, including medication assisted treatment (MAT), is also at the forefront of the conversation about opioids treatment. As health experts consider the impact of these programs, health communication scholars can uniquely contribute to the dialogue on opioids by investigating the nature and role of messages surrounding opioids. One important area of research concerns stigma communication about opioids and people who misuse opioids. Stigma, a devaluation of a group based on the possession of a discrediting attribute (Goffman, 1963), can have devastating consequences. Among people who misuse opioids, internalized opioid stigma has been positively associated with anxiety and depression (Akdag et al., 2018). Additional research has also found that individuals who express greater stigma toward opioids also express less support for substance use treatment policies and desire more punitive responses to opioids misuse (Kennedy Hendricks et al., 2017). However, experimental research about the impacts of stigmatizing language on these outcomes is sparse. More investigations are needed to discover the causal relationships between stigma communication and its impacts. The Model of Stigma Communication (MSC, Smith, 2007; Smith, Zhu, & Fink, 2019) provides an apt framework for such a test. The MSC predicts that four features characterize stigma messages, and these four features lead individuals to appraise the stigmatized group as dangerous, therefore leading to more stigma sharing, more desired social distance, more desire for behavioral regulation, and greater stigma beliefs (Smith et al., 2019). However, the MSC is relatively new, has been tested in only a few experimental contexts, and can benefit from additional tests of its mediating pathways. As such, the current study has three primary aims: (1) to test the MSC in a new experimental context (opioids), (2) to compare different potential mechanisms through which stigma messages lead to negative outcomes, and (3) to provide experimental evidence about the negative impacts of stigmatizing language about opioid users. In this aim, an online experimental study was conducted among 231 undergraduate college students. A 2 (classification stigma, including markers and labels: high, low) x 2 (enactment stigma, including responsibility and peril: high, low) between-subjects factorial experiment was used to examine the impact of different message features on study variables. Participants were randomly assigned to one of four experimental messages, which contained a hypothetical news article about a person who misused opioids. Then, participants completed measures of social distance, stigma beliefs, danger appraisal, public policy support, behavioral regulations, and emotional responses. Model comparison and mediation tests should illuminate both theoretical and practical implications.

**Men have Eating Disorders too: A Qualitative Study of Perspectives from Men with Eating Disorders.**

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Background: Eating disorders in men are surrounded by stigma and gender stereotypes (Strother, Lemberg, Stanford, & Turberville, 2012). From 1999 to 2009, the number of men hospitalized for an eating disorder related cause increased by 53% (Zhao & Encinosa, 2006). Males represent 25% of individuals with anorexia nervosa, and they are at a higher risk of dying, in part because they are often diagnosed later since many people assume that eating disorders are exclusively female conditions (Mond, Mitchison, & Hay, 2014). In addition, binge eating, purging, laxative abuse, and fasting for weight loss are almost equally common for males and females (Mond et al, 2014). However, less than one percent of research has focused on eating disorders among males (NEDA, 2019). A gender-sensitive approach with recognition of different needs for males is critical in effective treatment (Bunnell & Maine, 2014). Hence, this study addresses this lack of attention and advances research on eating disorders among males by examining factors triggering the development of eating disorders as well as barriers preventing men from seeking help.

Method: We conducted textual analysis of twenty-four YouTube videos posted online by males with eating disorders where they directly communicated their experiences. The selected data was transcribed, coded, and then analyzed with thematic analysis method. Analysis of narratives illuminates the perceptions of people about health and illness (Hyden, 1997). It is especially useful for marginalized and hard to reach populations like men with eating disorders.

Results and Conclusions: Our thematic analysis revealed three major themes related to triggering factors: 1) coping, 2) drive for masculinity, and 3) self-regulation and two themes related to barriers preventing men from help seeking: 1) shame and stigma and 2) lack of knowledge and services.

First, we confirm previous research that shame in men with eating disorders is a prevailing emotion and originates from the stigmatization of eating disorders as "female disorders" (Sernec & Brecelj, 2019). Second, our results are consistent with existing literature on coping mechanisms, including coping with bullying (Brewerton, 2007). Third, previous research found drive for masculinity to be a strong predictor for eating disorders among men but focused mostly on media influence (Morrison, Morrison, & Hopkins, 2003). Conversely, we found that drive for masculinity, promoting eating disorders, was mostly triggered by the lack of relationship satisfaction with romantic partners and peers. Forth, previous research found that men with eating disorders were attracted to extensive physical activities in attempt to regulate every aspect of their lives (Pope et al., 2000). Our findings refined this theme by adding knowledge on how ability to stay in control of their own desires and regulate their needs by means of food denial gave men with eating disorders the feeling of superiority and security. Lastly, we found that in addition to shame, the barriers preventing men from seeking help included lack of knowledge and services for men with eating disorders and poor doctor-patient communication. These results can be valuable for implementation of educational and recovery programs for men and effective doctor-patient communication design.

**Messages from Near or Far: A Targeted Nutritional Message Design Experiment**

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Background: In the United States, nutrition has been named a top public health priority (Centers for Disease Control and Prevention, 2017). The challenge of eating a nutritious diet is intensified among young adults in college due to balancing multiple roles such as jobs, social/ Greek life, coursework, and sports, which all add to the pressure of being a well-rounded college student (Thomas et al., 2017). On average, 70% of college students gain between 12 and 37 pounds during their four-year college career (O'Connor, 2012). Health promotion strategies promoting nutritious eating habits are essential for increasing awareness of healthier food options on college campuses.

Purpose: To advance communication efforts seeking to improve nutritious eating among college students, this study employs the health belief model (HBM: cite Becker here) to test the impact of message source in a targeted-message design experiment. This study hypothesizes that differences across promotional materials will occur from local, state, and federal organizations (H1-3). Finally, this study seeks to understand if tenants of the HBM predicts intention to eat a nutritious diet (RQ1).

Method: This study sought to test the role of message source among college students regarding healthy eating messages through a 3 (message source) x 2 (message format) online pre-/post-test experimental design with random group assignment. Undergraduate students (n=326) were recruited to participate through SONA, an online research recruitment system that exchanges research participation for extra credit. The survey instrument assessed components of the HBM: perceived susceptibility, perceived severity, perceived threat, perceived benefits, perceived barriers, self-efficacy, cues to action, and behavioral intention.

Results: To investigate the hypothesized differences between sources, a MANOVA was performed with the five dependent variables. Results showed no statistical differences across message source on HBM outcomes. Further analyses were conducted to examine within source differences on the dependent variables. With regard to constructs of the HBM, only severity and self-efficacy produced statistically significant results that led to intention. However, the local and federal messages were the only messages that produced significant results with regard to intention to engage in nutritious eating. Finally, to test the research question, which anticipated the tenants of the health belief model would predict intention to eat a nutritious diet, a regression analysis was conducted. Results of this analysis found the model to significantly explain 42.5% of the variance in intention to engage in nutritious eating ($r2 = .425$, $F[4, 321] = 59.37$, $p < .001$). Perceived severity ($\beta = .116$, $p < .05$), benefits ($\beta = .384$, $p < .001$), and self-efficacy ($\beta = .369$, $p < .001$) were all significant predictors of intention. However, perceived susceptibility was not a significant predictor of intention to eat a nutritious diet ($\beta = .009$, $p > .05$). Perceived barriers were not included in the model due to the lack of measure reliability.

Implications: In sum, bringing awareness to proper nutritional habits at the college-age level is important. This information is particularly needed for health practitioners and universities seeking to help college students navigate healthy eating while living on campus.

**Music and Motherhood: Using Melody and Lyrics to Prime Motherhood to Increase Reception of a Teen Suicide Prevention Message**

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Scholars argue the failure of many public health campaigns to persuade target audiences is often due to psychological reactance, or the negative emotional state aroused when the audience perceives a threat to their freedom. Entertainment-education strategies have been employed for disseminating health information for decades, with persuasive effects being attributed to a reduction in resistance to the message as a result of identification with characters, transportation into the narrative, or emotional response. The effects of musicals — where a narrative is set to music — has not been well studied, even though music has been shown to increase attention and memory of events.

Suicide is the second leading cause of death for Americans ages 10-24 years old, and one prevention strategy suggested by the CDC is teaching children skills to cope with stress. A 2(melody: absent or present) x 2(lyrics: absent or present) between-subjects factorial design experiment tested whether priming mothers of teenagers with melody and/or lyrics about the difficulty of motherhood would decrease the perceived threat and potential reactance to a message about coping with stress and teen suicide prevention either through emotional response to the music or activation of motherhood identity. All priming stimuli were based a song from the Broadway musical Dear Evan Hansen. Participants were randomly assigned to one of four conditions -- a no melody/no lyrics control condition, a melody-only condition (without lyrics), a lyrics-only condition (lyrics spoken), or a melody and lyrics condition (how the song is typically experienced). After being exposed to these priming conditions, participants all read the same public health message, which contained two sections about coping with stress and distress. Participants completed a follow-up survey within two weeks.

Participants (N=415) were mothers ages 28-40 years (M=36, SD=3.16) with at least one child between the ages of 10-16 years. Participants who indicated familiarity with Dear Evan Hansen were excluded. Analyses revealed that the priming stimuli effectively activated emotions as predicted. Listening to the spoken lyrics only resulted in the most negative reaction with both significantly higher negative emotions and significantly lower positive emotions. In contrast, listening to the melody only without the lyrics resulted in a significantly more positive reaction than all other conditions as well as significantly lower affective reactance to the public health message. The control condition and music and lyrics condition fell between these two extremes.

Analyses also revealed an interesting effect on knowledge retention. Immediately after reading the message, participants in the lyrics-only condition retained significantly more facts than the control group, but that difference was gone within two weeks. In contrast, although only marginally different at post-test, participants in the melody-only condition had significantly more knowledge than the control group at follow up. Finally, participants in the lyrics-only condition reported thinking about the message about coping with stress significantly more than those in the control condition. These findings support prior research that found music to aid information retention, and demonstrate that melody and lyrics can both produce significant, sometimes conflicting, shifts in mood and message processing.

# Nationwide Media Coverage of Gun Safety: Community Structure Theory and Community Vulnerability

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Community structure theory (Pollock, 2007, 2013, 2015) was used to compare city characteristics and nationwide media coverage of gun safety in newspapers in 28 major U.S cities, sampling all articles with 250+ words from 12/14/2012 to 8/3/2019. The resulting 531 articles were coded for "prominence" and "direction" ("government responsibility", "societal responsibility", or "balanced/neutral" coverage), then combined into each newspaper's composite "Media Vector" (range= .879 to -0.766, or 1.645). Twenty-two of 28 newspapers (79 percent) manifested government responsibility for gun safety.

Overall, the results confirmed a strong "vulnerability" pattern. (Media "mirror" the interest of marginal/disadvantaged groups: Pollock, 2007, p. 137.). Higher percentages of uninsured in a city are linked to more media emphasis on "government" responsibility for gun safety ($r=0.479$, $p=0.007$), as are higher percentages below the poverty line ($r=0.345$, $p=0.039$). Consistently, the greater the violent crime rate in a city ($r=0.289$, $p=0.076$), the more "directional" (though not significant) the media emphasis on government responsibility for gun safety. Regression analysis yielded greater percentages of uninsured in a city accounting for 22.9% of the variance associated with coverage emphasizing government responsibility for gun safety.

Finding measures of "vulnerability" associated with media support for government responsibility for gun safety is a complete departure from previous community structure research. For example, Patel, et al. (2017), confirmed essentially the "opposite" of the "vulnerability" hypothesis: a "buffer" hypothesis (privileged groups linked to sympathetic coverage of groups making rights claims) "Privileged" cities with greater healthcare access -- greater numbers of physicians per 100,000 and greater numbers of hospital beds per 100,000 people -- were associated with greater media emphasis on government responsibility for gun safety. One way to account for different findings: The 2017 Patel, et al. study sampled newspapers from 12/14/12 – 11/7/16, about four years. By contrast, the current study sampled newspapers for a more recent, almost seven-year period from 12/14/12 to 08/3/019, encompassing far more mass shootings.

Of all four US regions, the South had by far the most coverage emphasizing government responsibility for gun safety, contrasting sharply with the South as the region displaying the greatest proportion of gun ownership in the US: Almost 47% of gun owners in the US live in the South, compared to less than half of that in the West (23%) and Midwest (22%). What might account for this discrepancy between Southern newspapers disproportionately calling for government responsibility for gun safety in a region historically suspicious of "government' interference?

Empirically, media coverage of gun safety confirms it as a national issue associated with community vulnerability. Methodologically, combining measures of both "prominence" and "direction," highly sensitive Media Vectors highlighted the capacity of media to reflect community measures of "vulnerability." Theoretically, emphasizing the influence of local demographics, community structure theory complements agenda-setting theory at the national level, reconfirming the findings of an original founder of agenda-setting (Funk & McCombs, 2017), that both nationally prominent newspapers (agenda setting) and local community characteristics/concerns (community structure) can affect coverage of critical local issues.

# Netflix and Sleep: A Study on the Influence of Binge-Watching on Sleep Quality

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The increasing availability of content on streaming platforms is encouraging the use of several episodes of a TV series in one sitting, also described as binge-watching (e.g., Flayelle et al., 2019; Walton-Pattison et al., 2018). As binge-watching, often takes place at night (Rubenking et al., 2018), this study aims to investigate the effect of binge-watching on sleep quality. Although the impairing effect of binge-watching on sleep is repeatedly discussed, empirical evidence to prove a causal relationship is still missing (Carter et al., 2016; Exelmans & van den Bulck, 2017).

Based on suggestions of those previous studies (ibid.), it is assumed that binge-watching has a stronger negative effect on sleep quality than the use of single episodes of the same series across several days (appointment-viewing) (H1). Moreover, it is assumed that poorer sleep quality can be attributed to increased arousal after exposure, due to the higher intensity of media consumption (H2).

Consequently, an experiment with a randomized 2 (binge-watching vs. appointment-viewing) x 2 (media usage vs. no media usage) mixed-factorial design was conducted. Participants in the binge-watching condition were instructed to watch three episodes in one sitting. The appointment-viewing group was also asked to watch three episodes of a series but over the course of three days. In addition, all participants were instructed to refrain from using media in another evening. Participants conducted the study at home. Data collection involved different surveys (before/after series consumption, and in the morning after sleep) and tracking of Netflix usage (via an extension for Google Chrome). Moreover, participants received a Smartwatch, which documented their sleep quality and heart rate during series exposure.

Due to the comparatively complex design, the presented results contain data from 20 participants (N=20, $M_{age}$=27.9, $SD_{age}$=2.9, 50% female). Data from another 20 participants will be included in the conference presentation. Regarding H1, mixed-factor ANOVAs show neither an effect of media use per se nor of the type of media use on sleep duration. However, according to self-report, participants woke up more frequently after media-use (M=1.88, SD=0.86) compared to the night without media use (M=0.88, SD=0.86), $F_{(1,15)}$=26.26, p<.001, $\eta2$=.64. This effect was even more pronounced in the binge-watching condition, $F_{(1,15)}$=5.45, p<.05, $\eta2$=.27. The Smartwatch data also showed more frequent (micro-)awakenings after sleep onset at nights after media use (M=25.06, SD=7.68) than in nights without media consumption (M=20.28, SD=6.45), $F_{(1,16)}$=5.18, p<.05, $\eta2$=.24. H1 is therefore partially supported. To test H2, a regression analysis was conducted. Results show no significant effects of self-reported post-exposure arousal (SAM; Bradley & Lang, 1994) on the duration of sleep and no effects on the frequency awakenings during the night—both recorded by the Smartwatch. However, physiological arousal—indicated by the average heart rate (bpm) over the last five minutes of series use—promoted awakenings during the night (b=0.07, p<.05). H2 is thus partially supported.

Summarizing, results indicate that binge-watching can indeed have a negative effect on sleep quality.

Additional findings will be presented and discussed at the conference.

**Off the Wagon: Metaphors of Weight Management**

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Approximately three-fourths of middle-aged and older adults in the U.S. are overweight or obese (Ogden, Carroll, Kit, & Flegal, 2014). Obesity is a risk factor associated with health conditions such as heart disease, some cancers and osteoarthritis (CDC, 2015). Further, weight-based stigma and prejudice are pervasive (Puhl & Heuer, 2009). Weight-based stigma results from attributions made about overweight individuals; specifically, that personal defects such as laziness and lack of willpower cause excess body weight (Puhl & Brownell, 2001). Most of those who attempt weight loss through diet or exercise eventually regain the weight initially lost (Kraschnewski et al., 2010; Wing & Phelan, 2005). A growing body of evidence, however, challenges the assumption that this cycle is due to a lack of willpower. Instead, multifarious physiological processes (e.g., gut changes that affect appetite and metabolism) intersect with environmental and behavioral factors to render long-term weight management (WM) challenging (Camps, Verhoef, & Westerterp, 2013; Mann et al., 2007). The current research examined how middle-aged and older adults make sense of the complex experience of WM; specifically, how metaphors functioned to render the WM process meaningful.

Metaphors allow persons to perceive "one kind of thing in terms of another" (Lakoff & Johnson, 1980, p. 125) and, in doing so, to make sense of their experiences. For example, the conceptual metaphor "argument is war," helps concretize the abstract concept of 'argument,' and subsequently informs expressions like "I've never won an argument with him" (Lakoff & Johnson, 1980, p. 124). Within the health communication context, a small body of work has examined how metaphors assist persons' understanding of complex health situations, such as infertility (Palmer-Wackerly & Krieger, 2015) and cancer clinical trials (Krieger, 2014). However, no known work to date has examined how middle-aged and older adults' use metaphors to make sense of their WM experiences across their lifespan. The current study attempted to fill this lacuna and proposed the following research question:

RQ1: How do middle-aged and older adults use metaphors to make sense of their lifespan weight management experiences?

To answer this question, semi-structured, in-depth interviews were conducted with 20 middle-aged and older adults. Interviews were audio recorded and are currently being transcribed. These transcripts will be analyzed using grounded theory techniques. Complete results will be available for presentation at KCHC.

The findings from this study will enrich health communication theorizing by applying the study of metaphor to the unique and complex context of WM, and by focusing on the understudied population of middle-aged and older adults. In addition, the practical implications of these findings resonate with the 2020 KCHC theme of "Intersectionality and Interdisciplinarity in Health Communication Research." Specifically, these findings may offer clinical insights that dieticians, public health practitioners, fitness professionals, and other health care providers who work directly with those attempting WM can use. A better understanding of WM metaphors may encourage increased understanding of and compassion toward those experiencing the complexities of WM.

**Overcoming the Emotional and Informational Barriers to Patient Disclosure in Pregnancy: Perspectives and Strategies of Nurses**

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Nurses who care for pregnant and laboring women must elicit a range of psychosocial and medical information from their patients in order to provide optimal care. In maternity care, critical sources of information include both the prenatal record and the patient herself, while the types of information nurses need include patients' health behaviors, mental health and emotional wellbeing, social support systems, physical symptoms, and health history (Murray & Huelsmann, 2009). But pregnant women in these situations may be reticent when it comes to revealing sensitive health or psychosocial information about themselves to nurses who are caring for them (e.g., Keeling & Mason, 2011; Phillips, et al. 2007). Obtaining accurate information from patients is important in the context of pregnancy for a number of reasons, among them the ability to anticipate potential complications that may affect the mother or the fetus (Littleton-Gibbs & Engebretson, 2012). Our goal is to better understand nurses' perspectives on the barriers to and strategies for eliciting patient disclosures in pregnancy, and to produce recommendations for encountering difficult topics of disclosure using an interdisciplinary approach that can extend across fields of nursing practice.

Disclosure has been theorized and modeled in ways that largely focus on processes associated with the decision to disclose in personal relationships (e.g. Greene, 2009), and as a reciprocal process that moves parties toward greater intimacy in initial interactions (Altman & Taylor, 1973). In healthcare, although reciprocal disclosure has been examined in mental health nursing (e.g. Unhjem, Vatne, & Hem, 2018), little research has examined the processes of eliciting disclosure as a one-sided aspect of interpersonal information-seeking. Our data come from interviews conducted with 22 nurses, nurse practitioners, and certified nurse midwives from across the Southeastern United States. Using framework analysis (Ritchie & Spencer, 1994) to approach our qualitative data with an eye toward applied policy outcomes, this study identifies the topics of disclosure that can be difficult to elicit from pregnant women, analyzes nurses' constructions of the deeper barriers preventing those disclosures, and elucidates the communicative strategies nurses use to overcome those barriers. Nurse participants confirm that there are specific topics, including drug use, STIs, pregnancy history, sexual and physical abuse, social support, medications, and general health history that pregnant and laboring patients are often reticent or unable to disclose. The identified barriers behind these topics are broadly categorized as emotional or informational. Nurses attribute women's emotional barriers to fear, shame, anxiety, dislike, and suspicion. Informational barriers are attributed to patients not being informed of their own medical history, forgetting events or details, or not believing certain information is salient. Nurses' beliefs about the emotional and informational barriers to disclosure drive the strategic approaches they use to obtain information from patients, including education, creating a positive communication climate, using creative questioning techniques, and circumventing the patient by seeking out medical/prenatal records or biomedical indicators.

In addition to practical recommendations, this study adds interdisciplinary depth to our understanding of how nurses can elevate straightforward information-gathering to a therapeutic enactment of social support.

# Parents' Communication Work in the Management of Life-threatening Food Allergies

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The National Academies of Sciences, Engineering, and Medicine (NASEM, 2017) has identified life-threatening food allergies as a critical public health issue that significantly affects quality of life for patients and their families. As many as 15 million Americans have food allergies, including 1 in 13 U.S. children (NASEM, 2017). Despite the prevalence of this potentially fatal condition, no FDA-approved treatments exist, with the exception of epinephrine autoinjectors used in the event of a reaction. Parents of food allergic children must manage their child's condition through strict avoidance of the allergen(s) and constant vigilance for signs of an allergic reaction. Coping with a food allergy is an inherently social challenge that requires continuous communication when navigating all aspects of daily activity that involve food (e.g., meal planning, birthday parties, grocery shopping, holiday celebrations). In fact, food allergy parents have identified communicating with family and friends as one of the most difficult aspects of coping with their child(ren)'s food allergies (French, 2019), and patient advocacy organizations have explicitly called for more attention to these social challenges (Bute et al., 2018). Although food allergies have clear social and relational implications for parents of food allergic children, scholars have not examined the management of the food allergy experience using the lens of communication scholarship.

We drew on the concept of communication work (Donovan-Kicken, Tollison, & Goins, 2012; Iannarino, 2018) to explore how food allergy parents navigate disease management while negotiating and preserving valued relationships and identities. In their extension of Corbin and Strauss's (1998) Theory of Illness Trajectories, Donovan-Kicken and colleagues (2012) argued that communication work is a distinct and taxing line of work required to manage chronic illness. Communication work can entail a host of communicative tasks, including sharing information, topic avoidance, solicitation of social support, and identity management (Donovan-Kicken et. al, 2012; Iannarino, 2018).

Through interviews with 26 parents of food allergic children, we explored how parents use communication in everyday talk with spouses, relatives, and friends to keep children safe and prevent allergic reactions. Our results revealed that parents used communication to legitimate food allergy, balance face-threats with identity and relational goals, and coordinate care with spouses. In addition, participants described interactions in which communication work was futile while noting how social network members can help to alleviate work. Based on these findings, we contend that communication work in the food allergy context is the primary form of illness work. In the absence of therapeutic options, communication is the foremost means of disease management for parents of food allergic children. The interpersonal talk required to manage a child's food allergies is a prominent, essential, and often cumbersome feature of parenting food allergic children. Miscommunication and refusals to accommodate food allergies put children at risk and can damage relationships. We maintain that applying the lens of communication work in the food allergy context extends previous research that designated communication work as a distinct form of work and aids in understanding the communication facilitators and barriers that future interventions should address.

**Patients' Experience with Ambiguous Test Results: The Impact of Provider Interpretation on Emotion, Risk Perception, and Medical Risk Management**

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Uncertainty is pervasive in healthcare. Clinical genetic testing introduces uncertainties of exceptional quality and scale. A recently developed conceptual taxonomy of uncertainty provides greater nuance to thinking about the variety and meanings of uncertainty in health and genetics (Han et al., 2017). The taxonomy subdivides source of uncertainty into three types: 1) probability (e.g., indeterminate future outcome), 3) complexity (e.g., multiple causal factors), and 3) ambiguity (e.g., imprecision, lack of information; Han et al., 2011). Research on patients' experience with uncertainty in genetic testing has predominately focused on probability (Johansson et al., 2018) and complexity (Waters, Muff, & Hamilton, 2014) and less on ambiguity. A variant of uncertain significance (VUS) is an ambiguous result from genetic testing, which means a variant was identified in a gene associated with disease risk, but the impact of the variant on disease risk is scientifically unknown. In this study, we explored how patients' understood a VUS from genetic testing for hereditary breast cancer, and the impact on their emotions and risk perception.

Women who received a VUS from genetic testing for hereditary breast cancer were identified by genetic counselors and recruited by the study team. Individual telephone interviews were conducted (N = 20), digitally recorded, transcribed and reviewed for accuracy. Qualitative content analysis was conducted (Elyo & Kyngäs, 2007). We found most participants understood that the clinical meaning of a VUS is inherently unknowable due to a lack of data and scientific evidence (objective). They also voiced uncertainty stemming from their own lack of understanding about VUS (subjective). Participants' reported their genetic counselor encouraged them not to worry, and that the VUS was unlikely to be associated with increased cancer risk. As such, participants explained they were not worried, but some felt happiness/relief that they received mostly negative results. Participants did not believe the VUS increased their cancer risk, and did not plan to change their medical risk management.

Understanding how patients experience uncertainty, based on the source of uncertainty, can inform how providers communicate with patients to help with uncertainty management (Brashers, 2001; Han et al., 2017). Patients in this study described objective and subjective ambiguity associated with the VUS. Regardless of patients' understanding, their conceptualization of the result was informed by the genetic counselors' interpretation. Perhaps because the genetic counselors minimized the result, the VUS did not cause negative emotions or increased cancer risk perception in this study. This finding highlights the potential importance of expert interpretation when disclosing an ambiguous result, like a VUS, to patients. In contrast with prior theorizing, which suggests people frame uncertainty as either threatening or hopeful (Brashers, 2001), participants in this study experienced neither. In part, previous theorizing seems to have focused on uncertainty due to probability or complexity, but not ambiguity. Participant self-selection is a limitation of this study. Future studies should examine communication between genetic counselors and patients during disclosure to shed light onto more and less effective communication strategies when disclosing VUS, which could inform discussions about ambiguous results in other health-related contexts.

# Perceptions of Medical Error Risk and Severity on Disclosure Preferences

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Rationale: Medical errors account for more deaths per year than car accidents, HIV/AIDS, and breast cancer combined, making medical errors the third leading cause of death in the US. Medical errors are understood by providers and administration as an inevitable part of the practice of healthcare. Most communication research on medical errors focuses on provider perceptions of errors and their involvement in the apology and disclosure process. But what is the general public's perceptions of medical error risk? Does this risk impact their disclosure preferences? This study fills the communication discipline's gap in research by examining lay perceptions of medical risk and disclosure preferences.

Methods: Participants (N =276) completed an online survey about medical error risk perceptions and disclosure preferences. Participants were primarily women (80.4 %) and Caucasian (89.5%). Average participant age was 31.24 (range 18-72). 17% stated they had been the victim of a medical error and 47.1% said they knew a friend or family member who had experienced a medical error. Participants were also asked to rate the level of perceived severity of 24 common medical errors. These rankings were used to categorize medical errors into perceived low, moderate, and high severity.

Results: Participants' perceptions of medical error risk belief was significantly correlated with medical error severity belief and approaching significance with medical error susceptibility belief, suggesting that as perceived medical error severity belief increases, medical error risk belief increases. Although the correlation between susceptibility and risk was not significant, this may be because medical error susceptibility belief (M = 2.53) was much lower than severity belief (M = 3.04) and risk belief (M = 3.46).

Participants' perceived medical error severity was correlated with their disclosure preferences. Participants believed high severity medical errors should always be disclosed, significantly correlated with errors resulting in severe, moderate, and minor harm to the patient. High severity also correlated with near misses (errors that are caught before they result in patient harm). Patients preferred the disclosure of moderate severity errors only when they results in minor harm. Interestingly, 9.8% of participants indicated that they preferred not be informed about any medical error. Medical error severity was also significantly correlated with disclosure personnel preferences. Participants believed the medical error provider who made the error should disclose to patients in cases of moderate and high severity errors. The provider's supervisor, medical director, or facility CEO could disclose low, moderate, and high severity errors to patients.

Implications: Although the statistics surrounding medical errors are concerning, results suggest that the participants did not see themselves particularly vulnerable to medical errors. Surprisingly, participants also did not support universal disclosure of medical errors. Instead, the level of severity of the error influenced the disclosure of the error, regardless of the level of harm caused by the error. Participants are also not as interested in the disclosure of minor errors, such as forgetting to put bed rails down. Additionally, the results raise questions about facility administrative involvement in disclosure and who takes responsibility for disclosing medical errors.

**Pharmacist-Patient Communication about Medication Adherence: Patient-Centered Responses to Side-Effect Concerns**

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BACKGROUND: According to the CDC, medication non-adherence accounts for up to 69% of hospital readmissions and costs the healthcare system up to $300 billion per year. Non-adherence results from a wide range of factors, including: 1) health systemic factors (E.g. insurance coverage) 2) medication-level factors (E.g. regimen complexity) and 3) patient-level factors (E.g. health literacy). As medication counseling experts, pharmacists have an important role to play in helping patients address barriers to adherence. Medication Therapy Management (MTM), a comprehensive patient-centered service model mandated by the 2003 Medicare Modernization Act, was designed to improve medication adherence among at-risk populations (multiple chronic conditions and/or complex medication regimens). The core of MTM is the comprehensive medication review (CMR), an in-depth pharmacist-patient consultation conducted in-person or telephonically. The goal of the CMR is to systematically discuss each medication to identify medication related problems and collaboratively develop solutions. Health communication scholarship focused on provider-patient interaction is well positioned to work with pharmacy educators in interdisciplinary partnerships to identify and develop the specific communication competencies needed to provide this relatively novel MTM service.

RESEARCH PROBLEM: There has been very little empirical research on pharmacist-patient interaction during comprehensive medication reviews. Although MTM is described as patient-centered and collaborative, these are relatively abstract values that must be complemented by empirical research that identifies concrete communication practices for achieving patient-centeredness. Non-adherence can be an especially challenging topic to navigate. Patients express concern that reporting non-adherence may lead clinicians to label them a "bad patient," leading to underreporting of adherence difficulties. These discussions can also surface sensitive bases for non-adherence, such as economic hardship or sexual side effects. Pharmacists express concern about damaging rapport by appearing invasive or skeptical about patients' medication behavior. The goal of this research is to identify concrete patient-centered communication practices that pharmacists can use when counseling patients about adherence.

METHODS: Data: Audio-recordings and transcriptions of 53 comprehensive medication reviews (approximately 45 minutes each). Participants: 53 patients and 15 pharmacists. Setting: Single MTM clinic operating within a fully accredited college of pharmacy in the northeastern US. Analytic Method: Qualitative and quantitative discourse analysis. Data were quantitatively coded for a variety of features, including types of non-adherence, patients' reported reason(s) for non-adherence, and pharmacists' response types. Data were qualitatively coded into thematic categories using Atlas.ti.

FINDINGS: Data analysis yielded 80 instances in which a patient reported non-adherence; there were 14 different types of non-adherence. Patients provided 16 different reasons for non-adherence grouped into 4 major categories (side-effects; knowledge/competence; medication beliefs; practical issues). Pharmacists provided 20 different response types grouped into 5 major categories (advocate adherence; empower self-management; educate; offer practical support; empathize). For this paper, qualitative discourse analysis was conducted on all side effect cases (N=14/80) and the 3 most common pharmacist response types (validate the concern; provide information; recommend consultation with other providers). Two patient-centered communication practices that emerged from this analysis are: 1) using terms like "understandable" to receipt a report of non-adherence and 2) employing cost/benefit logic to explore medication behaviors.

# Predicting Affective Responses to Health Ads Using Computer-Extracted Musical Emotions: An Exploratory Study

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One of the quintessential features that shape contemporary health messages is music. It is widely accepted that music has a strong influence on the listeners' emotional states [1]. However, relative to the significant attention paid to the visual characteristics of health messages associated with emotional responses, cursory auditory features, such as the presence or absence of background music (BGM) [2]-[3], have been identified and examined. While useful, such an approach cannot tell us much about which parameters in the music contribute to its intrinsic emotional characteristics. On the contrary, in different domains, such as music cognition or affective computing, researchers have begun to predict human emotions based on a set of built-in musical features extracted from the audio, using computational approaches [4]-[5]. While this approach can provide a useful tool for health communication researchers, the two fields have yet to meaningfully intersect.

In this study, we took an interdisciplinary approach to examine to what extent an individual's affective responses to a health ad can be accurately inferred via computer-extracted musical emotions—i.e., the valence and arousal of the ads' BGM. We also explored what are other features of the ads that may influence the retrospective emotional responses (un) predicted by the computed musical emotions. First, computer-estimated emotion ratings on music (activity, tension, and valence) were obtained using MIRtoolbox algorithm developed based on various parameters in film soundtracks [4]. Using the model, we generated the computer-estimated arousal and valence ratings from the BGM of nine televised health ads. Second, each of the ads were rated by 25 participants to obtain self-reported valence and arousal scores. Third, other features of the ads were human coded based on a systematic scheme developed by message sensation value research [2], [6]. After we obtain all the scores and features, we mapped each ad on a two-dimensional space with self-reported arousal and valence, and visualized the computer-estimated valence (represented by cool-to-warm tone colors) and arousal score (represented by the size of circles) for each ad to visually assess their relationships.

The visual investigation indicated that while the self-reported arousal responses were well predicted by the computer-extracted arousal of BGM, none of the self-reported valence scores were predicted by the computer-extracted valence. Moreover, ads with positively-valenced BGM were mapped onto areas with low self-reported valence scores, indicating potentially negative associations between them. Further examination of the human-coded ad features suggested that, in many ads demonstrating such negative associations, the BGM were used together with visual or content features, such as intense imagery, a twist at the end, and/or threatening taglines, which might be responsible for the negative emotion elicited by the ads. This suggests the importance of considering other message features that may influence emotional responses independently or in combination with the musical aspect of the message in a future modeling process. Despite the explorative and descriptive nature, we believe this study is a meaningful first step in advancing conventional approaches used in health-communication research to predict the effects of health ads based on audio-visual features.

**Predicting Article Influence in Health Communication Research: An Exploratory Analysis of Health Communication and Journal of Health Communication**

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A common proxy for article influence is the number of times a paper has been referenced in academic citation databases (e.g., Web of Science). This process is commonly known as citing information in bibliometrics. To investigate article in influence in health communication, citation counts were extracted in fall 2019 from Google Scholar (GS) for 1,613 research articles published in Health Communication (HC) and Journal of Health Communication (JHC) for two 5-year cohorts (2002-2006, 2012-2016). Information was taken from each periodical's database and each title was searched in GS for its corresponding citing information. The number of articles in HC was 692 and the journal increased the number of articles it publishes significantly between cohorts (e.g., 22 articles in 2002, 156 in 2016). Similarly, JHC published 933 over the same time span and increased the number of articles from 63 in 2006 to 115 in 2012). Article titles, information on first authors (sex, affiliation), and relevant descriptive information (year of study, journal) were indexed and compared to citation counts. The average influence was 37.86 (SD = 58.49) citations, however there was positive skew and high kurtosis indicating the majority of articles had few citations (Median = 20, Mode = 8). The number citing articles ranged from 0 to 779 and citations for 25th, 50th, and 75th percentile were 10, 20, and 41 respectively. The majority of first authors were female (67%) and after controlling for year of study, there was no evidence of male or female authors being disproportionately cited (i.e., the Matilda Effect). When comparing cohorts, it appears the proportion of authors coded as female increased over time from 58% to 70%. Article citations did not differ by journal indicating parity between the two journals. The university affiliations credited with the most first-author articles was Purdue (31), The Ohio State (28), Michigan State (27), Pennsylvania State (25), and University of Kentucky (23). Trends in author sex, author affiliation, and article topics will be discussed in relation to article influence data over time. These findings indicate the field of health communication is a burgeoning area with diverse forms of scholarship on varied health topics.

# Pregnant Women's Perception of Climate Change

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Climate change is a global threat that poses significant risks to pregnant women and to the developing fetus and, especially in low income and urban areas (IPCC, 2007; UNFCCC, 2018; Kuehn and McCormick, 2017). Educating pregnant women about the risks to their pregnancy may improve maternal and child health outcomes.

Using a post-test only randomized control group design with 151 participants, this study investigated the effectiveness of two forms of educational messages–traditional fact-based messages versus narrative messages–on pregnant women's actual knowledge, perceived knowledge, self-efficacy, risk perception, information seeking behavior, and intended behavior.

Participants were randomly assigned to one of three different groups: (1) narrative information (2), traditional information (3) and no information control treatment. Overall, we hypothesized that narrative messages would yield positive impact on the above listed concepts when compared to other control groups. A majority of the participants were Black/African American pregnant women. MANOVA was used to analyze data collected. Findings show that a single exposure to narrative based message was more effective than the traditional message form on all outcome measures–actual knowledge, perceived knowledge, self-efficacy, risk perception, information seeking behavior, and intended behavior. Also, majority of the pregnant women perceived climate change as a threat to their health and the health of their unborn baby. Pregnant women who were exposed to narrative messages had an increased willingness to engage in self-protective behaviors and even actively seek information. This study suggests the feasibility of using brief narrative educational messages to educate pregnant women on climate change health risks as it relates to both their health and that of their developing babies. This study also adds to a growing literature on the effectiveness of narrative-based approaches to health communication.

**Primary Care Providers' Online Biographies: Can we Get the Information we Need from them to Make an Informed Choice?**

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Selecting a new primary care provider is not always the easiest task. Best practice recommendations advocate for patients to actually visit providers in-person prior to making their selections to determine whether patients would feel comfortable with them (BCBS.com, 2019). But, who has time for this?

Therefore, one of the most popular places patients seek information about future providers is via their online biographies on their healthcare systems' websites (Perrault & Hildenbrand, 2018). While biographies are under healthcare systems' complete control, prior research has found these biographies tend to not have much information that patients find useful in making their selections (e.g., philosophies of care; Perrault & Smreker, 2013). However, since this prior research was conducted, there has been a surge in the numbers of third-party ratings websites (e.g., ZocDoc, Healthgrades) that provide patient reviews and testimonials – which are sometimes of a dubious veracity (Fleischer et al., 2018; Taylor, 2018; Wang, 2017). Therefore, the primary purpose of the current study is to determine if healthcare system-produced biographies have improved within the past decade – and are offering more information to help patients make informed decisions.

More than 5,000 primary care providers' online biographies will be coded from over 600 healthcare systems in the U.S. – as identified by the AHRQ's Compendium of U.S. Health Systems (AHRQ, 2019). More than 40 different pieces of information will be coded within the biographies (e.g, photo available, philosophy of care, languages spoken, patient reviews) by the time of the conference. Biographies were selected from each healthcare system by going to the system's "find a doctor" portal, and selecting the first ten primary care providers listed (e.g., general medicine, family medicine, internal medicine). Two trained coders are currently coding the biographies for completion in late March, 2020. To the best of our knowledge, this will be the most comprehensive analysis of providers' online biographies to-date – essentially completing a census of most of the nation's healthcare systems' online providers' biographical databases. Findings will hopefully reveal where healthcare systems can continue to improve the type of information they provide to their prospective patients, to help them make the most informed selection of their future healthcare providers.

# Processing and Effects of Contradictory and Complex Health Information

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Contradictory and complex health information prevalent in the media can lead to uncertainty in health decision-making. We developed and tested a theoretical model of the processing and effects of such health information on uncertainty and information-seeking intentions. American adults (N = 584) were randomly assigned to one of three conditions: contradictory messages, complex messages, or no-message/control. Participants in the message conditions read contradictory or complex messages and completed measures of perceived message contradiction and complexity, appraisals of health outcomes, threat emotions, and information-seeking intentions. All participants completed measures of issue and decision uncertainty. Perceived contradiction was higher in the contradictory condition than in the complex condition. Perceived complexity did not vary across message conditions. The contradictory and complex messages increased decision uncertainty, but not issue uncertainty, relative to the control condition. The contradictory and complex messages did not generate different levels of negative appraisals, threat emotions, and information-seeking intentions, indicating that this theoretical distinction may not be meaningful to laypersons. Results supported a model in which message contradiction and complexity give rise to issue uncertainty, leading to decision uncertainty. Decision uncertainty in turn affects information seeking through the mediation of negative appraisals and emotions. Model refinements and theoretical implications are discussed.

# Prostate Cancer and African American Men: A Literature Synthesis on Strategic Health Communication Interventions from 2007 to 2018

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Prostate cancer remains an evolving health disparity facing healthcare consumers, particularly African American men. A recent study suggests that a lack of information and tailored interventions for minority populations (e.g., African American men) will continue to widen the disparity concerning prostate cancer. The study employs a literature synthesis by investigating past strategic health communication interventions targeting African American men about prostate cancer (N=149) between the years of 2007 to 2018. The criteria include (a) studies that investigated African American men and prostate cancer; (b) uses either a qualitative or quantitative method and (c) uses a communication intervention. The study will use thematic analysis to capture and categorize the results that best represents the composite sample of data. The purpose of the study is to derive a conceptual framework that focuses on the implication and convergence of strategic health communication interventions for prostate cancer among African American men. The results of the study indicate that the majority of strategic interventions often overlap and intersect concerning intervention type and rationale for intervention.

# Providers' Shared Decision-Making as a Predictor of Healthcare Outcomes in Managing Upper Respiratory Infections

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Antibiotic resistance significantly threatens public health (Centers for Disease Control and Prevention [CDC], 2019). Injudicious prescribing for upper respiratory tract infections (URTIs; e.g., colds, coughs; Fleming-Dutra et al., 2016) contributes to the crisis. Much of this prescribing is due to patients' expectations and demand for these drugs (Krockow et al., 2018), which in turn rest on misconceptions about the utility and risks of antibiotics (Hawking et al., 2016). Combating antibiotic resistance requires equipping providers with communication strategies to sustain patient satisfaction while upholding appropriate stewardship.

Shared decision-making (SDM) is an approach to patient care in which providers explain to patients the clinical factors involved in selecting a treatment plan, and treatments are jointly selected by patients and providers with attention to clinical factors and patients' experiences (Chi, 2018; Elwyn et al., 2012; Elwyn et al., 2014). SDM has succeeded at improving patient trust and satisfaction in other contexts (see Rathert, Wyrwich, & Boren, 2013 for a review). Moreover, prior studies have shown that SDM interventions in visits for URTIs can reduce providers' antibiotic prescribing (Legare & Labrecque, 2012). There is, however, insufficient evidence on how SDM affects other healthcare outcomes in this context that might contribute to patients' subsequent antibiotic seeking, rationing, or other practices detrimental to antibiotic stewardship. We examined how SDM affected stewardship-relevant outcomes following medical visits for URTIs for patients who were not prescribed antibiotics.

Method

Undergraduate students (N = 433) seeking care for an URTI were recruited from a student health center at a large eastern university. Participants completed surveys assessing study variables one and seven days after their appointments. Participants who received antibiotics were excluded from this analysis.

Results

Patient perceptions of SDM predicted affective and cognitive outcomes at days 1 and 7 post-visit. On Day 1, SDM was positively associated with patients' positive affect towards non-antibiotic treatment (b = .53, p < .001), perceived treatment quality (b = .24, p < .001), trust towards their provider (b = .62, p < .001), symptom management efficacy (b = .43, p < .01), and follow-up efficacy at (b = .51, p < .01). Also on Day 1, SDM was negatively associated with patients' negative affect towards non-antibiotic treatment (b = -.46, p < .01). SDM also had an indirect effect on perceived treatment quality (b = .15, p < .001), trust towards their provider (b = .06, p < .01), and follow-up efficacy (b = .09, p < .01) through positive affect. Similarly, SDM also had an indirect effect on perceived treatment quality (b = .17, p < .001), trust towards their provider (b = .14, p < .001), and follow-up efficacy (b = .07, p < .01) through negative affect. On Day 7, through Day 1 cognitive responses, SDM predicted retrospective symptom management efficacy and retrospective follow-up efficacy.

These findings suggest that SDM can improve antibiotic stewardship by increasing patients' trust in providers, confidence in the treatment plans they have been given, and perception that they can manage their illness without antibiotics.

# Recent Evidence Regarding Vignettes as Interdisciplinary Tools for Measuring Social Norms in Health Communication Research

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Introduction: Vignettes are interdisciplinary research tools that use short, hypothetical narratives to gather participant responses on a range of indicators including knowledge, attitudes, and behavioral intention. Vignettes have been used across social science disciplines for decades in both quantitative and qualitative settings and have theoretical roots in storytelling and narrative persuasion. Several recent international publications, including UNICEF (2019), have suggested vignettes may be valid tools for measuring social norms in formative, process, and impact evaluation of behavior change communication programming, but the evidence supporting vignettes as a measurement tool for social norms specifically in health communication is unknown. A systematic review was conducted to understand how vignettes have been applied in health communication over the last ten years, with a particular focus on the evidence regarding social norms measurement.

Method: A three-person team searched four academic databases, and conducted a Google Scholar search, to identify empirical articles utilizing vignettes in health communication. Articles had to be peer-reviewed, in English, and published from 2009-2018 to be included. As the systematic review did not include human subjects, it was exempt from institutional review board approval. Two hundred and forty articles emerged from the search and 168 remained after removing duplicates. Each article was screened by title and abstract and excluded if our institutional library did not have access, if the article had no mention of vignettes, if the article was not about health communication, or if the article did not report on peer-reviewed primary research. The full text of 45 studies were included in the final review and analysis.

Results: Social norms were measured in just three of the 45 studies. In a study of HIV stigma in India, Vlassoff et al. (2012), applied a vignette in focus groups to gauge social acceptance of a fictional woman living with HIV. In Lillie, Tarini, Janz, and Zikmund-Fisher (2015), an online survey study of adults used a vignette about muscular dystrophy to measure respondents' intention in participating in genetic testing; two survey questions measured subjective norms on the topic. And in Winskell et al. (2018) vignettes were included in a randomized controlled trial of a smartphone game on the topic of HIV in Kenya for children age 11-14. A survey conducted at three time points measured perceived social norms with six items.

Discussion: With only three articles making any mention of social norms, this review suggests there is not yet a strong evidence base in the academic literature for measuring social norms in health communication with vignettes. When considering the grey literature, however, it is possible to hypothesize that vignettes may indeed be currently utilized in health communication practice, but a delay exists in demonstrating evidence of their effectiveness in the peer-reviewed literature. This review thus identifies both a potential practice-research gap in health communication and offers suggestions for increasing research efforts to better understand if, why, and how vignettes operate as interdisciplinary tools for measuring social norms in health communication research.

# Responsibility Framing of Dementia in Media Coverage: Prevention or Treatment?

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Dementia is an international challenge with currently 46.8 million cases worldwide, and with more than 131 million that are predicted to develop dementia by 2050 [1]. Recent medical evidence suggests that various preventable lifestyle factors contribute to the prevalence of dementia. Consequently, the WHO published guidelines, which provide evidence-based recommendations on lifestyle behaviors and interventions to delay or prevent dementia [2]. Since public opinion is also influenced by media coverage, it seems necessary to examine whether these recommendations and these changes of emphasis (from treatment to prevention) are also reflected there.

Framing theory was used as a theoretical background, because it is conceptualized as "to select some aspects of a perceived reality and make them more salient in a communicating text" [3]. In detail, we based our research on responsibility frames [4,5,6], which distinguish between the responsibility for the causes and/or the treatment options and barriers of the disease. Existing studies only differentiate frames on a societal and individual level, although the social network plays a key role in caring and supporting the patients, especially in the context of dementia [7]. Therefore, the role of the social network as another level of influence in the media coverage should also be considered in research.

The aim of this study is to analyze the media coverage on dementia, as it has a great potential to change the opinion and attitudes towards the disease [8]. On the one hand, we examine which causes and treatment options and barriers, including preventive actions mentioned by the WHO, are portrayed in the media at the respective levels (individual, social network, society) (RQ1). On the other hand, we want to investigate which causes and treatment options and barriers are specifically presented. (RQ2).

To answer these questions, a quantitative content analysis of dementia-related articles from the highest circulation newspapers in Germany in the period from January 1, 2017 up to November 15, 2019 has been conducted. Next to other variables, the responsibility frames were analyzed. The first results indicate that the treatment options including the prevention actions (81.4% of all articles) are mentioned more often in the articles than the causes (49.4%) for dementia. While the causes were framed most times on an individual level (88.3% of causes), the responsibility for the treatment was linked primarily to the society (76.4% of treatments), as well as to the social network of the patient (25.2%) (RQ1). Besides the fixed genetic predisposition (25.0% of causes on individual level) that could not be influenced by any behavior, nutrition (22.1%) was presented as the most important individual causing factor. For the treatment the 'prevention and education' (33.0% of treatment on society level) were most frequently mentioned, followed by 'access to/availability of health care' (32.0%) (RQ2).

Our results indicate that media framing of dementia already focuses on prevention on a societal level but should also consider influencing factors on the social level, because the social network plays an important role for dementia patients who can no longer live independently as the disease progresses.

**Reviewing the Literature on Community-Based Participatory Research Team Communication**

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Community-based participatory research (CBPR) is an approach to research that works to combat health disparities within marginalized communities (Abma et al., 2017; Brown & Stalker, 2018; Kastelic et al., 2018; McAllister, Green, Terry, Herman, & Mulvey, 2003). This research philosophy has become increasingly popular in the past 20 years (Brown & Stalker, 2018; Simonds, Wallerstein, Duran, & Villegas, 2013). Many people believe that CBPR is a method that can positively aid social justice action as it relates to health (Israel et al., 1998; Minkler & Wallerstein, 2011; Simonds, Wallerstein, Duran, & Villegas, 2013). Perhaps the most critical element to the CBPR philosophy is the equal partnership between academics and community partners (Estacio et al., 2017; Israel et al., 1998; Peralta, 2017; Mayan & Daum, 2016; Minkler & Wallerstein, 2011; Wallerstein & Duran, 2003). Israel and colleagues (1998) argued that collaborative partnerships require both the scholars and community partners to "participate as equal members and share control over all phases of the research process, e.g. problem definition, data collection, interpretation of results, and application of the results to address community concerns" (p. 179). Equal partnerships are not only imperative for maintaining human rights (Reason & Torbert, 2001), but also for producing rigorous research (Minkler, 2005). The importance of the relationship between the researcher and the community partners are thus imperative to the process of CBPR. However, the process of communication between the researcher and the community partners has yet to be rigorously examined through the lens of communication theory. Thus, this study attempts to fill this gap in the literature by conducting an inductive systematic review study of CBPR research. A multi-level search will be conducted from 1998 (the year of Isreal et al., 1998 article) to October, 2019 (the date of data collection). The inclusion criteria for articles required 1) the articles meet McAllister et al. (2003) 5 criteria of CBPR, 2) the articles explained how the project was community-based rather than community-placed, and 3) articles had to explicitly discuss the process of communication with community partners (not just community members). Finally, the article had to explicitly discuss the strengths, weaknesses, barriers, and/or lessons learned as it relates to communicating between researchers and community partners. The results of the review study can aid CBPR scholars in their communication methods with community partners in order to ensure effective partnerships throughout the CBPR intervention. In addition, this study acts as a first step to applying communication theory to the CBPR researcher-community partner relationship.

# Sexual Consent in the LGB Community

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In recent years, there has been a sexual revolution that has drawn attention to the meaning of sexual consent and created a demand for men and women to be educated on the term. The public has become hyper-aware of sexual harassment and sexual assault because of the "Me Too" movement, which brought to light the fact that sexual harassment and violence have become so normalized in our society that there needs to be additional education on consent and policies put in place to shift this norm (Lee, 2018). The Me Too movement, as well as other similar cultural movements whether national or international, have opened the discussion up to policymakers, legal professionals, scholars, and the public about how people define and negotiate consent in relationships of varying intimacy. Previous research on sexual consent has focused solely on heterosexual individuals and their impressions of how people define and negotiate consent in relationships, leaving lesbian, gay, and bisexual (LGB) individuals out of the conversation and potentially vulnerable in their sexual communication with partners (Abbey, 1982; Jozkowski, Manning, & Hunt, 2018; Peterson & Muehlenhard, 2007). There is evidence that sexual assault and sexual harassment are just as big of an issue (if not more so) in this community as they are in the heterosexual community. The CDC's National Intimate Partner and Sexual Violence Survey found that, for LGB individuals, 44% of lesbians and 61% of bisexual women surveyed experience rape, physical violence, or stalking from a partner, compared to 35% of heterosexual women while 26% of gay men and 37% of bisexual men experience these same issues compared to 29% of heterosexual men (Human Rights Campaign, 2010). For LGB individuals, fear of discrimination over their sexual identities can prevent them from seeking help for sexual violence. There is also the possibility that the available resources for LGB individuals are directed more so towards heterosexual individuals, failing to provide information tailored to their needs (RAINN, 2019); traditional sexual education courses, even comprehensive sex education, do not include discussions of LGBT+ health information that individuals who identify as such need in order to protect themselves. Not only do most sex education programs lack discussion of sexual orientation, but three states also require a negative discussion of sexual orientation, and only 3 states require any discussion of sexual consent. Although issues surrounding consent are of significance to LGB individuals, we know little about how they define and negotiate consent as well as where they learn this information. Through the framework of social support, a qualitative study was completed with 25 individuals participating in in-depth interviews to answer the research questions of what are the meanings of sexual consent for LGB adults, what dilemmas have LGB adults faced when discussing sexual consent, and what factors have shaped LGB adults' views on sexual consent. In order to determine the approach that the LGB community takes towards defining and negotiating sexual consent, it will require an understanding of how the meaning of this concept is constructed within this community.

# Sexual Health Communication and Relational Quality in LGBTQ+ Couple Relationships

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Sexual health in LGBTQ+ relationships remains understudied in health communication. Negotiation of nonmonogamy agreements have been reported in some same-sex relationships, primarily between male partners (Grov et al., 2014; Stultz, 2019; Whitton et al., 2015). Sexual exclusivity (i.e., monogamy) has long been upheld as the heteronormative model for romantic relationships, despite evidence of marital infidelity ranging from 26% to 70% for women and 33% to 75% for men (Shackelford & Buss, 1997). Some same-sex couples have reported maintaining monogamy (Blumstein & Schwartz, 1983; Fitzpatrick et al., 1994), yet studies on relationship quality between (non)monogamous male couples indicate no differences (Blasband & Peplau, 1985; Kurdek & Schmitt, 1985; Whitton et al., 2015). Qualitative studies suggest that male couples that negotiate nonmonogamy may experience increased trust, communication and openness, and relationship satisfaction, as well as decreased feelings of betrayal from infidelity (Stults, 2019). STUDY AIMS: No prior studies have explored prevalence of (non)monogamy agreements in a large national sample of LGBTQ+ relationships (Stults, 2019). Also, since same-sex marriage became nationally available (Obergefell v. Hodges, 2015), no studies have explored prevalence and impact of (non)monogamy on relational quality in legally married versus unmarried LGBTQ+ relationships. Thus, this study seeks to explore: AIM 1) prevalence of (non)monogamy agreements and their association with relationship quality (commitment, satisfaction, closeness, and sexual satisfaction) in LGBTQ+ relationships through analysis of two years of data (2017 & 2018) from a large national online survey with participation from 50 US States (N = 1,950). And, AIM 2) prevalence of (non)monogamy agreements and their association with relational quality in legally married (50%) versus unmarried LGBTQ+ couples. RESULTS: A majority (72%; n = 1,279) indicated establishing a monogamy agreement, while 27% (n = 478) were non-monogamous (with or without restrictions). There were significant differences by couple type (male-male, female-female, and relationships where one or both partners did not identify as male or female) for the prevalence of (non)monogamy; with female-female relationships being least likely to establish nonmonogamy. Using MANOVA, differences also emerged in relational outcomes by (non)monogamy agreement and marital status. Those with a monogamy agreement reported significantly higher relational satisfaction, closeness, and sexual satisfaction with one's partner. However, there were no significant differences in relationship commitment based on (non) monogamy agreement. Significant main effects by marital status indicated greater commitment, relational satisfaction, and closeness in married couples than unmarried. However, unmarried couples had higher sexual satisfaction. There were no significant interaction effects for (non)monogamy agreement and marital status on any of the relational quality outcomes. DISCUSSION: Overall, a majority (72%) of participants reported communicating a monogamy agreement with their partners that had positive associations with relational quality. Frequency of nonmonogamy was similar in married and unmarried couples (27%, respectively). This suggests LGBTQ+ couples may not see marriage as a determinant of monogamy, but rather are more open to negotiation of (non)monogamy agreements. Results also indicate that relationship commitment did not significantly differ based on (non)monogamy. Future research is needed to further understanding of sexual health communication in LGBTQ+ couple relationships.

**Skills-based Training Programs Used to Reduce Physician-related Burnout in Graduate Medical Education: A Systematic Review**

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Background

The effect of burnout on healthcare providers is well-documented yet lacks a solid foundation of evidence-based knowledge to properly affect change. According to the American Medical Association, 43.9% of United States physicians suffer burnout to some degree, with approximately 15% of physicians surveyed reporting clinical symptoms of depression. Past research has shown that the level of burnout a medical resident experiences correlates to how these physicians communicate with their patients and ultimately affects patient outcomes. Furthermore, when physicians use depersonalization to cope with intense emotional exhaustion, they communicate using more medical jargon and use a less personal style. Doctors in residency or fellowship training programs may be particularly susceptible to burnout. This study draws its theoretical frameworks from the communication theory of resilience which explains how communication processes help people construct their realities and have the capacity to enhance people's abilities to bounce back from highly stressful triggers in daily life.

Objective

We are conducting a systematic review to examine the effectiveness of educational programs to reduce burnout in graduate medical education (e.g., residents and fellows).

Methods

This study is a work in progress. We are following the PRISMA guidelines in order to ensure our review procedures are rigorous, and we submitted our review protocol to PROSPERO. We have worked with two trained librarians to develop and refine the search strategy. Five databases (PubMed, PsychInfo, ERIC, Communication & Mass Media Complete, and Academic Search Premier) were searched with an open beginning date through November 2019. Eligible, included studies will be those that measure skills-based programs with the explicit, primary goal to reduce burnout within graduate medical education. Studies can be any type of experimental study design. Studies will be excluded if they do not report a skills-based intervention, do not have physician burnout as an outcome, or include participant samples outside of graduate medical education training programs. Using Covidence software, we plan to screen articles for inclusion in a two-phase process: (1) title and abstract; (2) full-text. Both phases will include two independent coders, with discrepancies reconciled through discussion.

Results

The systematic review is currently in the screening stage and will be completed by March 2020. We will have the finished analysis to present in April 2020. We plan to present results and summary measures of the following: sample characteristics, type of study/sampling technique; how the trainings used were operationalized/measured; how the results of the study were recorded; how graduate medical trainees' stress management was recorded; how burnout was measured and recorded; the level of change pre- and post-intervention (if applicable); and the main findings of the study. This study also relies on the Kirkpatrick Assessment model, which is one of the most commonly used methods for program and training evaluation. Only outcomes focused in either Level 3 (evaluating behavior) or Level 4 (evaluating results) of the Kirkpatrick Assessment Model will be included.

# So I Talked to my Doctor: How DTC Commercials Present Experiences and Treatment of Depression

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In the United States, approximately 6.7% of the population has some form of depression. Half of adults with depression have reported experiencing some difficulty with work, home, or social activities. Women are twice as likely to have major depressive disorder as men, though both sexes experience bipolar depression relatively equally. Previous research indicates that direct-to-consumer advertising for depression medications is heavily marketed to women. In fact, while approximately 13% of the American population took antidepressants, women are twice as likely as men to take antidepressant medication. Influenced by these lines of research, this study sought to understand how current depression medication commercials present the illness and medication experience via the levels of the Social Ecological Model. The social ecological model is understood to have four levels: individual, relationship, community, and society. The social ecological model describes the social and cultural components of the human environment influence human development. The final sample for this study totaled 35 direct-to-consumer television commercials accessed via the website iSpot.tv. The sample represented five depression medications from American pharmaceutical companies, that either treated major depressive disorder, bipolar depression, or supplemented a patient's current antidepressant medication. Qualitative analysis of the television direct-to-consumer advertisements was guided by three research questions: (1) How are the different levels of the Social Ecological Model presented in the commercials in terms of patients experiencing depression? (2) How are the different levels of the Social Ecological Model presented in the commercials and website videos in terms of treating depression? (3) Are there any differences between men and women regarding the depression experience? Findings indicate that all of the commercials heavily depicted the illness experience pre-medication and post-medication at the individual and relational level. Prior to the patients using/being introduced to the medication, they often experienced the depressive symptoms alone at the individual level. On the relational level, the depressive experience pre-medication had negative effects on the patients' relationships with friends, family, and co-workers. When looking at the experience of treating depression with medication, and going to the doctor, some patients in the commercials went to the doctor alone while others visited the doctor with support from another individual. Additionally, once medication was introduced as a treatment, the patient experienced more positive relationships with family, friends, and coworkers. While the patient was better/happier with medication, the results were not over dramatic. The community level was seen in the commercials via patients' interactions in the workplace. Societal levels of the Social Ecological model were not present in the commercials. While the ads for major depressive disorder did feature both men and women diagnosed with depression relatively equally, a large majority of the ads depicted women as the main or only patient for bipolar depression and when patients needed to take an additional antidepressant. These results provide a deeper understanding of how depression is depicted in direct-to-consumer advertisements and have implications for how both men and women may understand their risk of and treatment for the condition.

# Social Support and Social Isolation among College Students

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The availability and procurement of social support has been studied as both a potential buffer in stressful situations and a direct link to indicators of well-being in the communication literature (MacGeorge, Feng, & Burleson, 2011). Social isolation is a related factor that is potentially confounding. Though it is often negatively associated with social capital and its many benefits (Locher et al., 2005), and has been found to be associated with harmful mental health indicators such as suicidal ideation and self-harm (Endo et al., 2017), it is a construct that appears much more frequently in the sociological literature than in that of communication. While previous studies have made broad associations between these related phenomena, this study puts them in direct association with one another, unpacking their multidimensional constructs among college students (N=234). Social support has been sub-divided into the different categories of emotional, tangible, esteem, informational, and network support, while isolation has been found to have both internal and external factors. With some studies showing a decline in primary close relationships over the past two to three decades, the focus in this study is on the support garnered from a single relationship that an individual identifies as his or her most intimate.

Findings indicate a strong association between social support and well-being, and that support levels are impacted by gender and well-being indicators are impacted by the inclusion of a close confidant in one's life. Among college students, the procurement of social support from one's closest relationship plays a relevant and direct role in an individual's sense of well-being, even when controlling for measures of social isolation, supporting the direct effects hypothesis. Of three measures of well-being, social support is associated most strongly with a reduction of loneliness, more so than with an increase in satisfaction or relatedness, though the latter are also significantly associated. These significant associations remain even when broken into the five social support types, indicating that all types of social support are directly beneficial in a general sense. It was also found that both gender and the type of relationship one considers closest each play significant roles in the amount and type of support one receives. Females receive more social support on the whole than males, and naming a platonic friend as one's closest relationship is associated with less emotional and tangible support than the other types. Perhaps least surprisingly, being able to clearly and unequivocally name a person in one's life to whom one can discuss personal or intimate matters is a clear indicator of significantly higher levels of well-being on all three measures.

# Sustainability in Community Engaged Research: A Case Study through the Lens of Communication Infrastructure Theory

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Sustainability is increasingly acknowledged as a central issue in the conduct of community engaged research (CER) (Hacker, et al., 2012; Mikesell, Bromley, & Khodyakov, 2013). Academic researchers are exhorted – by funders, the research community, and community-based organizations (CBOs) – to shun helicopter-style research engagements that advance academic careers but have only short-term benefit to host communities. Rather, researchers are encouraged to design for sustainability. We report here, through the lens of communication infrastructure theory (CIT) (Ball-Rokeach, Kim, & Matei, 2001), on a 10 year health communication initiative's evolution from "academic research project" to "CBO-sponsored program," and the tensions and tradeoffs that were emergent in the process. We propose a CIT-informed model for sustainability in CER.

Initiated in 2009 as a federally funded CER project in a small, racially and ethnically diverse urban population center in New York State, the purpose of the Women's Health Project (WHP) was to identify effective strategies for encouraging underserved, minority women to obtain recommended reproductive health screenings. To that end, the WHP focused on overcoming an acknowledged communication disjuncture between residents and CBOs (Author, 2014). A key feature of the project was its team of peer health advocates – community residents who encouraged their friends and neighbors to connect with the outreach efforts of the WHP's research team and its local partner organizations. The WHP functioned as an interstitial actor, and the peers as liminal project members with characteristics of both micro- and meso-level community actors; thus, in CIT terms, enhancing the integration of the story-telling network (STN) of residents and CBOs (Authors, 2014).

Upon the expiration of the initial 5-year grant, the first author secured private foundation funding to sustain the project's activities, but also sought to negotiate a more permanent "home" for the project as an initiative of an established CBO. To sustain the project's mission of promoting ongoing integration of the network of residents and organizations would require leadership, resources, and participation (of interstitial liminal actors, residents, and CBOs). With foundation support, and thanks in part to the foundation's preexisting relationship with a CBO, a transition was effected whereby the peer health advocates became employees of a partner CBO, and the WHP was rebranded as a new initiative of the CBO with a somewhat broader mission.

While the transition sustained the core mission of the project to connect residents with services, at the same time, this model has raised some questions. Are the peers still seen by fellow community residents as "bridgers" between their community and the CBOs when they are employed by a CBO? How is the transition viewed by other CBOs? Drawing upon ethnographic observations; interviews with CBO staff involved with the rebranded WHP, the peer health advocates, staff members of other organizations in the community; and focus groups with community residents, we present stories of the reconfigured STN one year post-transition. We identify tensions and tradeoffs emergent in transitioning the project's status; and we offer lessons learned and a model for sustainability to community engaged researchers.

# The Effect of Emotions in Merck's "Did You Know" PSA on College Students' Attitudes and Intentions toward HPV Vaccination, Policies and Prosocial Behaviors

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Introduction/Purpose
Human Papilloma Virus (HPV) is one of the most common sexually transmitted infections (STI) that can result in genital warts and cancer (Centers for Disease Control, 2019). The HPV vaccine has been available in the U.S. since 2006 and is a primary prevention method of HPV-related cancers (Centers for Disease Control, 2019). Due to the preventable nature of HPV-related cancers, public health practitioners have tried to educate the public via health campaigns about how to vaccinate, yet vaccination rates remain low (Blasi, King & Henrikson, 2015). A reason for failure is that the campaigns can create unintended effects that manifest in multiple dimensions, including those related to audience types and valence (Cho & Salmon, 2006; Wakefield, Loken & Hornik, 2010).

This study combines health communication, mass communication and public health scholarship to assess the impact of the Merck campaign "Did You Know," a series of emotionally evocative public service announcements (PSA) about HPV vaccination, for its emotional impacts on an unintended but relevant audience—college students. College students are in the HPV vaccination "catch up" age range, meaning they are still recommended for a 3-dose vaccination to prevent HPV-related cancers. This demographic is also the prime consumer of the after-hours ad, and hence, an unintended audience of the campaign targeted toward their parents. Discrete emotion theory was applied to focus on identifying prominent positive and negative discrete emotions evoked from viewing the ad and to discern their differences in ability to predict attitudes and intentions toward HPV vaccination, policies and prosocial behaviors.

Methodology
Using survey methodology, a sample of 263 undergraduate students from a large southern public university were asked to answer sociodemographic questions before being directed to watch the 60 second PSA "Did You Know." Subjects then completed a questionnaire rating their emotional responses to the ad, and their opinions about HPV policy and prosocial behaviors as well as attitudes and intentions toward the HPV vaccine. We used descriptive statistics and hierarchical regression controlling for demographics to explore links between emotions and outcome variables.

Preliminary Results
Results showed all six emotions were present from viewing the PSA. Positive emotions of compassion and hope predicted more rigorous HPV policy acceptance, intentions toward prosocial behaviors and attitudes toward HPV vaccination beyond control variables. Negative emotions did not predict outcome variables, and neither demographics nor emotions predicted intentions to vaccinate among those not already vaccinated.

Discussion
Results replicate emerging literature showing that multiple emotions can stem from viewing health campaigns. Further, as found in recent scholarship with other health behaviors, positive emotions may have the ability to shape attitudes and policy decisions about HPV vaccination. Health campaigns should consider emotions aside from fear and clearly delineate all relevant target markets when developing HPV vaccination campaigns.

# "The Heart didn't Know Enough to Stop": Insights from Patient Metaphors about Living with Cardiac Implantable Electronic Devices

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Metaphors conceptualize one idea in terms of another (Lakoff & Johnson, 1980), and can provide insight into how people view their health conditions in the context of lived experience. Importantly, understanding patients' perspectives through the use of metaphor can improve patient-centered communication (Periyakoil, 2008). This study included interviews with thirteen older adults with cardiac implantable electronic devices (CIEDs), who were part of a larger study with older adults with heart failure (N=24). The purpose of the larger study was to understand how adults with heart failure make decisions about their health and to design a patient-facing technology for heart failure self-management. The interviews took place at a large, non-profit hospital system in the Midwest. During preliminary analyses of the interviews (Daley et al., 2018; Holden et al., 2018), we observed metaphors in the transcripts naturally used by participants when talking about their health. I (CD) conducted a metaphor analysis (Goering, 2015; Schmitt, 2005) on 13 transcripts of participants with CIEDs that revealed themes related to patients' perceptions of their device and heart functioning. Participants were ages 66-84 (mean 74.2, SD 5.5), 9 males and white. The analysis revealed four metaphoric frames:

1. The device is overpowering. This frame portrayed a violent or controlling impact from the device: knocked off your feet, hit, whipped, zapped, bolt of lightning, and you're not gonna outbeat that shock. One participant described the shock as a "loud bang… like someone's held a gun up to your ear and pulled the trigger." Another participant explained that his pacemaker "started running me".
2. The device's job is to revive. This frame construed the therapeutic, life-saving aspects of the device positively, such as: "so far that good ole pacemaker has done its job. I got paced back in"; and "it (the device) does a good job… it starts the heart back beating."
3. The heart is autonomous. This frame portrayed the heart as a separate being, capable of having its own knowledge and communication: "I don't know where it (the heart) gets its information from,"; the "right side (of the heart) didn't know enough to stop," and "the heart finally told me, we're gonna create limits to ya.."
4. The heart is a machine. This frame included mechanical terms that were used to describe the heart, such as "pump" and "power" and "operating on 30%."

Participants' metaphors suggest that there's a lack of perceived control concerning device therapy and their heart functioning. Prior interview studies also show that patients feel of loss of control (Morken, Severinsson, & Karlsen, 2010) and stress related to consequences of living with a device (Humphreys, Lowe, Rance, & Bennett, 2016). However, metaphors in this study also revealed participants' perceptions of the life-saving ability of their devices. In clinical encounters, listening for metaphors that patients use could help clinicians communicate with heightened sensitivity to patients' perspectives, and enhance their understanding of their device and heart functioning.

# The Impact of Mixed-valence Frames on Sun Protection - New Insights into Gain-loss Framing Considering Emotional Flow and Arousal

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Extant research has examined the impact of gain–loss framing on people's health attitudes and intentions (Gallagher & Updegraff, 2011). However, studies often fail to show a clear direct effect of framing on health-related outcomes (Gallagher & Updegraff, 2011; O'Keefe & Jensen, 2009). Moreover, little is known about the effects of gain-loss framing in media content (auditive or audiovisual)—particularly for longer narratives that combine both gain and loss frames. Investigating longer narratives could shed light on the interaction of affective reactions, i.e., valence shifts, with gain-loss frames (Nabi et al., 2019). Those emotional shifts are in particular important, because research in other contexts of persuasive health communication (e.g., fear and humorous appeals) indicate that elicitation of different emotional reactions could be more effective than just triggering one emotion (Authors, 2018, 2019). Specifically, the concept of "emotional flow" suggests that emotional shifts enhance the depth of information processing, thereby increasing persuasive impacts (Nabi, 2015). Consequently, this study investigates the potential benefits of confronting people with mixed- (gain-loss or vice versa) instead of single-valence (pure gain or loss) frames. In particular, it is assumed that mixed-valence frames will lead to higher cognitive arousal and emotional experiences, which eventually mediate and promote adaptive outcomes (e.g., intention and behavior).

To investigate the proposed mediation an experimental study was conducted. Participants (N=181, Mage=21.94; SDage=2.33, 81.8% female) were confronted with one of four versions of a radio-podcast about sun protection and UV-related illnesses. Each version contained information about skin and eye related sun protective behavior, that were manipulated with respect to their emotional dimensionality, i.e., were either gain or loss framed. After listening to the podcast, participants reported their level of arousal (SAM; Bradley & Lang, 1994) and emotional experience (M-DAS; Renaud & Unz, 2006) during exposure as well as their behavioral intentions (Ajzen, 1985). In a follow-up questionnaire two weeks after the experiment participants' actual sun protection behavior during the past two weeks were assessed. The proposed relationships were analyzed by means of mediation analysis (Hayes, 2018; Model 4 with multiple mediators, i.e., arousal, positive and negative emotional experience).

Results reveal no promotional effects of mixed-valence frames during exposure on health-related outcomes through arousal and emotional experiences. However, further analyses indicate a significant influence of stimulus ending on the behavioral intentions ($R^2$=.12, p<.001). First, spots ending with a gain frame were related to more positive emotional experiences ($\beta$=.25, p=.061) which in turn increased adaptive intentions to engage in sun protective actions ($\beta$=.20, p=.003). At the same time, they decreased arousal more strongly ($\beta$= –.35, p=.003), thereby decreasing behavioral intentions ($\beta$=.21, p=.006). These findings may be explained by the recency effect of emotions, indicating that in order to create more effective health appeals it might be better to conclude a message with a frame that is able to induce a certain level of arousal— within this study a loss frame. Additional results concerning message processing (e.g., the role of reactance) and different outcomes (e.g., attitude, behavior) will be presented and discussed at the conference.

**The Influence of Popular Music Referencing Anxiety and Depression on College Students' Mental Health Attitudes**

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Background. College students' age cohort has experienced an increase in suicide rate that has reached its highest point in decades (Miron et al., 2019) while scholars have observed significant increases over time in the presence of anger, disgust, fear, and sadness cues in American pop music lyrics (Napier & Shamir, 2018). Concurrently, college students are listening to music – and thus surrounded by these messages in the lyrics – more than ever before (Nielsen, 2017, November 2). As these types of songs have the potential to raise awareness of mental health risk and normalize proactive mental health behaviors, the present survey of U.S. college students ages 18 to 24 aimed to examine the potential effects of exposure to mental health messages from this often overlooked yet highly influential medium.

Methods. College students (N = 253) at a large southeastern university were surveyed about their exposure to five contemporary pop songs about struggling with mental health (MH) to examine associations between their perceived personal connection (PPC) to the songs themselves (an adaptation of identification), their parasocial relationship (PSR) with the songs' performing artists, and their empathy for others who struggle with their MH. Empathy was proposed as a mediator between the audience involvement measures – PPC and PSR – and outcome measures including reduced MH stigma, support for public MH resources, willingness to seek MH help, and willingness to support others struggling with their MH.

Results. Of the 253 participants, 98.8% (n = 250) reported being familiar with at least one of the five songs with a mental health theme. Linear regressions controlling for background factors including age, gender, race, personal MH experience, and affinity for songs discussing MH struggles indicated that both college students' PPC with the songs and their PSR with the artists was associated increased MH empathy. This empathy mediated outcomes including reduced stigma, support for public MH resources, and willingness to support others struggling with their MH, but not willingness to seek MH help. Post hoc analyses revealed that college students who reported stronger PPC to these songs reported that they use music to self-medicate for their MH symptoms.

Conclusions. This study highlights popular music as an underexplored mainstream medium with immense potential to influence young people's mental health attitudes and behaviors. These types of songs may be playing a role in increasing college students' MH empathy and thus are helping to foster proactive mental health behaviors and intentions among this at-risk population. The findings are fascinating for public health as young adults are being surrounded by popular songs with mental health messages more than ever before. Celebrity musical artists are viewed as peer role models by this at-risk population; MH practitioners should consider both these artists and their music as an MH message delivery system to encourage proactive MH behaviors among this at-risk population.

# The Intersectionality Between Social Media Influencer's Fitness YouTube Videos and Young Women's Efficacy: A Content Analysis

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Individuals are increasingly turning to social media as a dominant source of information about social norms and appearance standards (Bair, Kelly, Serdar, & Mazzeo, 2012). YouTube is a major source for diet and nutrition-related information among teenagers and young adults. Social media influencers represent a new type of independent third-party endorser who shape audience attitudes through blogs, tweets, and the use of other social media. YouTube health and fitness influencers present us with an interest combination of marketing techniques (Crawshaw, 2013).

Minimal communication efforts have examined the potential social media influencers have toward individuals seeking to manage or lose weight via YouTube. Social cognitive theory allows communication scholars to examine individuals' behaviors that are more likely to be reproduced when they can relate to another individual (e.g., social media influencer). This study seeks to fill in the gap of communication literature through a theory guided content analysis.

For the scope of this analysis, we focus on vicarious learning and self-efficacy (through verbal persuasion factors: ease, rapidity, permanence, evidence format) as factors that can influence young women's behavior. The following research questions and hypotheses are proposed:

RQ1: How frequently are personal experiences (vicarious experience and performance accomplishments) used to give health and fitness advice by fitness influencer accounts?
RQ2: What types of sources do influencers mention during their videos?
H1: Rapidity messages will be more prevalent than ease and permanence messages.
H2: Ease messages will be more prevalent than permanence messages.
H3: Narrative evidence will be more prevalent in fitness YouTube videos more than statistical evidence.

Our sample consisted of 30 videos from the top 30 women fitness influencers. Using Krippendorff's Alpha, intercoder reliability was $\alpha = .821$.

Results revealed there were 221 instances of personal experiences: vicarious experiences (64%) and performance accomplishments (36%). There were instances of verbal persuasion message characteristics including: ease (43%), permanence (31%), and rapidity (26%). Evidence format emerged 238 times in the form of narrative (78%), statistical (5%), or both (17%). Surprisingly, external sources were never mentioned.

Results confirmed that message properties revealing efficacy and both evidence types were prominent in our sample. Issue-relevant sources were not widely use throughout our sample. This could be explained by the amount of self-promotion that occurs in the YouTube platform. Influencers use their own experience and their image as a heuristic for credibility.

Through social cognitive theory guidance, we can infer, that viewers might develop a sense of confidence and improve their self and response efficacy when watching these videos. Because most verbal persuasion consisted of ease messages, viewers may feel more confident in executing healthy behaviors. This study advances the scholarship of message design in a social media context through a social cognitive theory framework. We were successful in the conceptualization and operationalization of message variables from social cognitive theory into video format messages. Future research should continue these efforts of examining new media and thinking of social media influencers as the persuaders of the future.

**The Medical Disclosure Model: Exploring Predictors of Patient to Medical Providers Disclosure Strategies**

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Patients often modify the information they share with providers, limiting or avoiding particular health-related information. If patients do decide to disclose, they are mindful of how best to share specific pieces of information, particularly when anticipating negative reactions from providers. Although current disclosure theories provide predictive models for understanding individuals' disclosure decisions, these models position disclosure within close, interdependent relationships. This relational expectation is often inconsistent with patient experiences; patient disclosure may occur with providers who are not interpersonally close and are perceived as more powerful. Thus, this research seeks to modify current disclosure theory to better understand patient disclosure in healthcare contexts. Grounded in the disclosure decision-making model (DD-MM), we propose an extended model that incorporates components of the revelation risk model (RRM) and one additional, empirically-supported variable, illness interference. Research supports that once a decision to disclose has been reached, individuals may select among several disclosure strategies. Variables that predict disclosure may vary by strategy. Thus, to determine reliable predictors of healthcare interaction disclosure, we explore how variables within the DD-MM including components of information assessment, recipient assessment, and disclosure efficacy; variables within the RRM including information valence, willingness to reveal, and communication efficacy; and illness interference predict seven disclosure strategies of preparation and rehearsal, directness, incremental disclosure, entrapment, indirect mediums, humor, and third party disclosure. Participants were recruited from Amazon's Mechanical Turk when they volunteered to participate in a study about talking to your doctor (n = 1094). Eligible participants completed an online survey (n = 500). Extensive data cleaning resulted in 320 participants who have an established medical provider, anticipate a medical visit within the next two years, and identified health-specific information they avoid sharing with providers. Participants were generally women (59%), middle-aged (M = 36.10, SD = 11.13), attended college (60%), and Caucasian (80%). Many participants (55%) regarded their health-specific information as private or secret. We performed a series of linear regressions. For each regression, a disclosure strategy was the dependent variable, and predictors included stigma, relevance, visibility, illness interference, information valence, closeness, emotional reaction, reciprocity, topic avoidance, willingness to reveal because provider needs to know, and willingness to reveal because the provider asked. All variables except the willingness to reveal because provider needs to know significantly predicted at least two strategies. Significant variables comprise the newly developed medical disclosure model. Five variables were significant across five strategies. Specifically relevance, operationalized as contagion, information valence, anticipated provider negative reaction such as being critical or judgmental, anticipated provider reaction of changing the topic, and if the provider asked the patient about the information were consistent predictors of medical disclosure. Results present quantitative evidence that patients are mindful of how they share their private, health-related information, and anticipate selecting strategies as dependent on the information. For example, participants reported sharing stigmatized information via third party, incremental, or indirect strategies. Alternatively, patients report disclosure when providers ask about the information. This highlights the need for providers to directly ask questions rather than assume patients will share relevant information.

# The Role of Engagement in the REAL Media Substance Use Prevention Curriculum

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Prevention curricula rely on audience engagement to effectively communicate their messages. However, to date measurement of engagement has primarily focused on self-report that is often an indicator of liking or satisfaction. Emerging technologies for intervention delivery hold promise not only for additional engagement indicators but also for dissemination outside of traditional vehicles such as classroom delivery. The present study, grounded in social cognitive theory (Bandura 1986) as well as a theory of active involvement (Greene 2013), explores the role of engagement (as measured by self-report, program analytics, and observation) with short term substance prevention outcomes such as self-efficacy to counter argue and descriptive and injunctive norms. The study tracks 4-H youth (N = 310) engaged with a media literacy focused e-learning substance prevention curriculum named REAL media. Results indicate that self-reports of engagement predicted self-efficacy to counter-argue at three months, but a program-analytic indicator of dosage was predictive of both injunctive and descriptive norms at three months. The observational indicator was correlated with self-efficacy to counter argue but not significant in the predictive models. The implications and directions for future research in prevention are discussed.

**The Role of Message Framing and Efficacy in Prescription Drug Misuse Prevention Messages**

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The misuse of prescription drugs (PD; consuming PD in a manner different than that prescribed by a physician) is responsible for more than 130 deaths each day in the US (NIDA, 2019). Opioids, one of the most commonly misused PD, costs $75 billion annually (Florence et al., 2016). This has led to desperate calls to fight the epidemic and one solution would be to create effective prevention messages. Message design research emphasizes that message content has a strong influence on effectiveness (Cohen et al., 2015). Specifically, research found the impact of framing (Kasting et al., 2019) and efficacy (Roberto et al., 2008) on intentions and behavior. Therefore, this research examines the impact of these message design features in the context of PD misuse.

We conducted 2(framing) X 2(efficacy) experiment with random assignment to view one of the 4 messages that differed in their use of "medicine" or "drug" to describe the story of an individual misusing PD and presence or absence of efficacy information. Outcome variables of interest were intentions to misuse and expectations regarding engaging in other unhealthy behaviors (such as the likelihood of binge drinking). Relevant control variables (e.g., past use; sensation seeking) were included.

The PROCESS model 1 (Hayes, 2013) was used for analyses. Overall, the model, $R^2 = .36$, $F(8, 202) = 14.07$, $p < .001$, revealed that neither efficacy, $B = -0.14$, $SE = .15$, $t(202) = -.93$, $p = .35$ nor framing, $B = 0.01$, $SE = .15$, $t(202) = .09$, $p = .93$ had an effect on intentions. A significant interaction $B = 0.64$, $SE = .30$, $t(202) = 2.10$, $p = .04$ revealed that those participants who received medicine-framed message without any efficacy information expressed higher intentions to engage in misuse ($M = 2.10$) than those who received message with efficacy information ($M = 1.66$).

Furthermore, there was no main effect of $R^2 = .16$, $F(8, 201) = 4.67$, $p < .001$ efficacy, $B = -.40$, $SE = .23$, $t(201) = -1.72$, $p = .09$ and framing, $B = -0.29$, $SE = .23$, $t(201) = -1.25$, $p = .21$ on expectations regarding practicing other unhealthy behaviors. A significant interaction , $B = 0.91$, $SE = .47$, $t(201) = 1.94$, $p = .05$ revealed that when efficacy information was excluded, those in medicine-framing ($M = 4.83$) perceived the expectations to engage in other unhealthy behaviors to be much higher than those in drug-framing ($M = 4.04$) as a consequence of PD misuse.

The findings suggest the importance of including efficacy information in the PD misuse context. In medicine framing, when efficacy information was included, people were least likely to express intentions to misuse but when it was excluded people associated high likelihood of practicing other unhealthy behaviors as a consequence of misuse. In conclusion, findings suggest that using "medicine" rather than "drug" framing and including efficacy information in campaigns might be an effective message design strategy in PD misuse context.

**The Supplementary Role of Cancer Information Services:A Comparison of Callers with Prior Information from Doctors vs. the Internet**

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After a cancer diagnosis patients and their relatives often have the need for information and advice to help them cope and make decisions [1]. Consequently, many of them actively seek cancer-related information from various sources, such as physicians and the Internet [2–5]. Physicians provide reliable information, but they often dissatisfy patients and their relatives (e.g. because of time constraints or a lack of psychological support) [6, 7]. In contrast, online cancer information is highly available, but lacks quality control. Thus, information needs of cancer information seekers using either source often remain unfulfilled [8].

Here, Cancer Information Services (CIS) have been established as an easily accessible source for evidence-based information [9], which might supplement other sources. But there is not much research on individual characteristics explaining the differences between those who gather information from other sources before they turn to a CIS. Further, it can be expected that patients and relatives wo turn to a CIS differ regarding their supportive needs depending on the information they have obtained from other sources before [10].

Therefore, the purpose of our study is to compare CIS callers with prior information from a doctor only to callers with prior information from the Internet only regarding the type of caller (patient or relative), their informational needs, the perceived level of prior information, if they used further information sources after their contact with the CIS, as well as sex, age, education, and the patient's cancer stage.

We analyzed data from two large surveys of callers (in sum n=2,408) who contacted the telephone service of the largest provider of cancer information in Germany in 2011 and in 2016/17, respectively. Callers who agreed to participate, received a questionnaire within two weeks after the contact with the CIS and were asked to state their prior sources of information, level of information prior to the call, and informational needs. Participants who reported only prior information from doctors (n=1,507) are compared to those with only prior online information (n=901).

Results of the logistic regression model (Nagelkerke's $R^2$=36.5%) indicate that (after controlling for age, sex, and education) people who only talked to a doctor prior to the CIS contact are more likely to be a patient (OR=0.19), during (OR=0.55) or after first treatment (OR=0.64) or with recurrence (OR=0.62). The two groups do not differ in their perceived information level, but in some of their informational needs. People with prior information from a doctor are more likely to seek general explanations (OR=0.66) and decision support (OR=0.67), while people with prior online information are more likely to seek contact information for further support (OR=1.62), and they used further informational sources after their call to the CIS more often (OR=1.82).

Understanding the characteristics and needs of callers with prior information from different sources can help to better fulfill their unique information and support needs and to improve the service of CIS and other cancer-related information providers. This could serve as a basis for the development of communication strategies and tailored information resources for CIS [11].

# The Transdisciplinary Approach of the BCERP: Merging Diffusion of Innovations and Evaluation Processes

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Formative research to inform communication efforts and summative evaluations to assess effects and effectiveness are fundamental to health communication research. However, evaluation approaches tend to be atheoretical, with sparse exemplars that strongly integrate theory into evaluation processes. Diffusion of Innovations (DOI), a theoretical framework that explains how people adopt new innovations, posits that individuals often look to opinion leaders for information and guidance on new information and products, including health recommendations. In this project, DOI is integrated into an evaluation of a continuing medical education (CME) program from a transdisciplinary team of researchers from the Breast Cancer and the Environment Research Program (BCERP). The CME focuses on emerging science that links exposure to certain chemicals in the environment to breast cancer risk, particularly during certain periods in female's lives called windows of susceptibility (WoS). And given that medical professionals are often seen as opinion leaders for health information, the CME was designed for pediatric health care providers to take for credit towards their annual accreditation requirements.

Formative research was conducted to assess perceptions and knowledge from caregivers and pediatric health care providers (PHCP) on environmental exposures and breast cancer risk, especially during the WoS of pre-puberty and puberty. This formative work helped to create the three-module CME. Each module of the CME revolved around a different focus area, including: 1) windows of susceptibility and breast cancer risk, 2) types of environmental exposures to toxic chemicals, and 3) communication training on how to communicate such findings with patients and caregivers.

Summative evaluation revolved around participants' changes in knowledge, attitudes, communication intention and communication behaviors revolving around sharing the information in the training with patients and caregivers. Participants took a pre-test, immediate post-test, and three-week follow-up post-test for evaluation. Results reveal that PHCP knowledge increased after the training and held over time, PHCP planned on incorporating information pertaining to breast cancer and environmental exposures during WoS into their well-child checks (WCC), and behavior measures at the three-week follow-up period show that PHCP actually incorporated information from the CME training into their WCCs.

This presentation will provide a model for incorporating theory throughout the development, implementation, and evaluation of the CME. It will emphasize the CME process from formative evaluation, to using results of the formative evaluation to inform the creation of the CME, and results of the summative evaluation of the PHCP and the CME. This presentation will also highlight the implications of using DOI to inform projects aimed at opinion leaders, particularly PHCPs. Finally, it will address the utility that DOI has in efforts to use opinion leaders as a source of information dissemination for public consumption, as well as the necessity of incorporating theory into evaluation processes to maximize effects and effectiveness.

**"This is My Story": Processing of Narratives and Testimonials About Adolescent E-Cigarette Use**

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Background. E-cigarette use is on the rise among youth, despite the many harms for this vulnerable population. In 2019, 27% of adolescents in high school report currently (past 30 days) using e-cigarettes. Education strategies are needed to inform youth about the risks of use. One approach to communicating the risks of e-cigarette use is to embed risk information into a narrative format; narratives often persuade readers by increasing transportation, causing them to feel lost in the story, and increasing relevance, causing readers to engage in deeper message processing. A second approach to communicating the risks of e-cigarette use is to embed risk information into a testimonial format; testimonials can persuade readers through the same mechanisms. However, to date, most research has used the narrative and testimonial format interchangeably. We sought to determine if narratives and testimonials do, indeed, perform similarly in communicating e-cigarette risk information to teens.

Methods. A national convenience sample of 928 US adolescents ages 15-18 completed an online experiment in October 2019. We randomized participants to one of four conditions: testimonial, firsthand narrative (the main character is an e-cigarette user), secondhand narrative (the main character's boyfriend is an e-cigarette user), or informational control (modification of e-cigarette message from the surgeon general). Participants reported perceived message effectiveness, transportation, relevance, and self-appraisal after reading the stimuli. Participants also rated their personal perceptions of risk from e-cigarette use. We conducted a one-way multivariate analysis of variance (MANOVA) with Bonferroni-adjusted post hoc analyses to examine the impact of reading format on all outcomes.

Results. Participants who read the testimonial reported significantly greater personal relevance (than the secondhand narrative, $p = .035$, $\eta2 = .02$) and self-appraisal (than the firsthand narrative, $p = .012$, $\eta2 = .02$). Participants who read either of the two narratives reported significantly less perceived message effectiveness compared to the informational control (firsthand narrative, $p = .013$; secondhand narrative, $p = .045$; $\eta2 = .01$); however, there was no difference between the testimonial and the informational control on the perceived message effectiveness measure ($p > .05$). Both narratives and the testimonial elicited significantly greater levels of transportation compared to the control (all $p < .05$, $\eta2 = .02$).

Conclusion. Sharing e-cigarette risk messages as either narratives or testimonials can engage adolescents. While both formats encourage transportation, participants who read the testimonial reported greater personal relevance and greater self-appraisal, indicating that hearing about someone's struggle may help them reflect on their lives. Our findings suggest that adolescents processed risk information presented in the narrative differently than information presented in the testimonial. However, our study did not measure the all mechanisms of processing. Future studies should integrate additional processing concepts, such as identification, to determine how adolescents engage with these formats differently. Nonetheless, our results offer evidence that the format of information influences adolescents' processing of e-cigarette risk information.

# To Step into a Character's Shoes: How Character Perspectives and Modalities Influence Persuasion in a Health-Oriented Immersive Story.

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Background – Telling a story of someone who engages in, and subsequently suffers from, a risky behavior is a common strategy in health campaigns to persuade the public away from such behavior. These stories are typically told from the perspective of the risk-taker. However, exposure to stories told from the risktaker's perspective may inhibit persuasiveness by arousing reactance and suppressing message recipients' identification with the risk-taker. There are other character perspectives available for telling a story, such as friends or family members of the risk-taker, yet it remains unknown how the character perspective may impact persuasion. This question of character perspective is imperative at a time when immersive media technology (e.g., virtual reality, 360° video) is increasingly used to immerse audiences inside of a story. These technologies enable audiences to repeatedly experience a story from multiple character

perspectives, or in other words, as multiple characters. The goal of this research is to further our knowledge of the role of character perspective and immersive storytelling technologies in narrative persuasion. We use an immersive story about binge drinking to examine how different character perspectives (risk-taker vs. friend) impact persuasion and how the effect of perspective varies as a function of modality (phone vs. virtual reality headset).

Methods – A 2 (perspective: risk-taker vs. friend) × 2 (modality: phone vs. virtual reality headset) between subjects experiment was conducted with 147 young adults in a research lab. Two immersive stories featuring the negative consequences of binge drinking were used. They had identical stories, but differed in terms of the character perspective through which the viewer experienced the story: Greg (the binge drinker) or Steph (the non-binge drinking friend). Through the binge drinker's perspective, participants saw Greg's body and hands and experienced the story in the first-person through Greg's eyes. In the friend's perspective, participants saw Steph's body and hands and experienced the story through Steph's eyes. Participants watched one of the videos either with Cardboard virtual reality headsets or phones. A pre- and post-exposure questionnaire was administered to measure key variables.

Results – We found that taking the perspective of the risk-taker (vs. friend) led to more favorable attitudes toward binge drinking, less perceived severity of binge drinking, less identification with the assigned character, and greater psychological reactance among viewers. Reactance was found to mediate the effect on attitudes toward binge drinking. These results were most salient when the story was viewed in phones. Furthermore, we found that modality had a significant main effect on perceived susceptibility, with viewers in the virtual reality headsets (vs. phones) condition reported greater perceived susceptibility.

Implications – Given that health-oriented narrative experienced from a risk-taker's perspective attenuate the persuasive effects, health message designers should be cautious of using a risk-taker's perspective to dissuade the adoption of risky behavior. In addition, our findings imply that enhancing the immersion level may offer a unique way to bolster narrative influence. Considering the growing interest in virtual reality, immersive storytelling is a promising tool to communicate health risks to the general public.

# Transgender Identity Disclosure Strategies in Patient-Provider Interactions

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The HealthyPeople 2020 mandate listed transgender individuals as a population of concern due to increasing health inequities(1) related to poor quality of care, lack of qualified providers, and higher rates of physical and mental health issues compared to the general population(2,3). Unfortunately, the 2020 goal may be unfulfilled as transgender patients continue reporting experiences of discrimination in medical settings(4). These experiences complicate trans-patients' decisions to disclose this identity to medical providers. However, quality health outcomes are intrinsically tied to productive patient-provider relationships, and transgender patients often must disclose this identity to receive proper care. Many transgender individuals attempt to "pass" as their affirmed gender(5), and the state of being transgender cannot be readily confirmed through casual interaction alone(6). This naturally leads to situations, such as medical interactions, where the sharing of transgender identity becomes central to the conversation.

One variable across disclosure theories that influences if and how one discloses is disclosure efficacy(7,8), or one's confidence in their ability to share information and achieve desired outcomes. Efficacy is influenced by risk perceptions of sharing the information and anticipated recipient response. In situations of high risk and anticipated negative responses, individuals may be willing to disclose in specific conditions such as medical interactions when the provider needs to know the information. Increased efficacy predicts increased disclosure and use of strategies perceived as effective for sharing information. Reduced efficacy predicts disclosure strategies that are evaluated as less effective in achieving desired outcomes(7,9). The purpose of this study was to explore transgender patients' disclosure strategies used in sharing this with medical providers.

The following research question was posed: RQ1: What are the strategies transgender patients report using when disclosing their transgender identity to medical providers?

Interviews were conducted with 26 transgender individuals. Participants discussed their strategies for telling providers about their transgender identity. Interviews were coded using an inductive analytic approach to identify major themes(10); coding was refined according to the constant comparative method(11).

Three overarching themes with sub-themes were identified. Theme one includes disclosure planning, or participants' preparations when deciding how to disclose to providers. Sub-themes include selecting interactional versus non-interactional disclosure options; tailoring disclosure messages using basic terminology that is clear, concise, and avoids bias. Theme two describes how participants determine timing of the disclosure by finding a point of entry within the conversation. Theme three describes participants' disclosure preparation of rehearsing or seeking advice. This includes intrapersonal strategizing and preparing mental or written scripts; strategizing with trans friends and close others to plan disclosures; and strategizing with support groups to plan disclosure based on shared experiences through the lens of best practices. These themes align with several revelation strategies outlined across disclosure literature, and present new ways of conceptualizing disclosure, especially within unique relationship contexts such as the patient-provider.

Study implications include highlighting the experiences of a minority population within healthcare settings; exploring intersections of health, gender, and sexuality; and extending current disclosure research into a unique context.

# "Triggering" Information Seeking: Risk Messages, Elaboration, and Immediate Seeking Behaviors

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Background: Several scholars have theorized on the topic of health information seeking, including factors that motivate the information search process. Although these theories and models have evolved over time, in general, this literature asserts that "triggers" such as risk perceptions and/or knowledge gaps motivate information seeking. However, few studies have examined the effects of messages designed to increase information seeking or tried to identify intrinsic message features associated with information seeking intentions and behaviors. In addition, in the risk information seeking and processing (RISP) model (Griffin, Dunwoody, & Neuwirth, 1999; Griffin, Neuwirth, Giese, & Dunwoody, 2002), information processing is believed to be an integral part of the information seeking process. Again, however, studies have rarely tested this prediction. For example, others have noted, "Future research should explore risk information seeking as it relates to information processing and subsequent knowledge (which is strongly suggested by the larger body of RISP research)" (Eastin, Kahlor, Liang, & Ghannam, 2015, p. 617). Therefore, in this study, we experimentally examine the role of information processing when people are exposed to messages designed to vary their perceptions of risk and how information processing affects immediate information seeking behavior.

Method: Participants were recruited from an online participant panel coordinated by Qualtrics, Inc. In order to qualify for the study, participants had to be an adult (aged 18-65 years old) living in the United States. After an individual agreed to participate in the study, they were randomly assigned to one of three environmental risk topics (arsenic, bisphenol A [BPA], or volatile organic compounds [VOCs]) and one of three message conditions (risk, informational, or no message control). Risk messages included severity and susceptibility information. Informational messages included basic information about the risks but no severity and susceptibility information. Participants who were exposed to a message engaged in a thought-listing task to assess message processing, responded to closed-ended message processing items, and additional items not reported here. Participants were then given the opportunity to seek more information about their risk topic via a sample search engine page with live uniform resource locators (URLs). The sample search engine pages were designed and hosted by us so that we could track information seeking behaviors (e.g., time spent on the search page, number of links clicked).

Preliminary results: We used Hayes' (2018) PROCESS model 4 to run a preliminary test, comparing participants exposed to informational messages to participants exposed to risk messages (n = 834). These results suggest that participants who were exposed to risk messages reported higher levels of elaboration in support of the message advocacy than participants who were exposed to informational messages (unstandardized coefficient = 0.42, SE = .08, $p < .001$). Higher levels of elaboration, in turn, increased the amount of time spent seeking (unstandardized coefficient = 5.40, SE = 2.53, $p = .03$). Thus, elaboration appears to mediate the relationship between message type and time spent seeking additional information. These results shed light on the important relationship between message exposure, information processing, and information seeking.

# Trophies and Stars: Using Heuristic Cues in Credibility Perceptions of Doctor's Online Profiles

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As of 2010, nearly 80 percent of American adults had used the Internet to research health information (Hu & Sundar, 2010). Although patients typically rely on the Internet for health information, the Internet begets a platform for physicians to disseminate a sense of credibility and trustworthiness in attracting potential patients. Lin and Spence (2018) highlighted that system-generated cues such as online ratings can potentially enhance credibility perceptions, which may lead patients to perceive a physician as credible and trustworthy through the bandwagon heuristic. Although some researchers (D'Angelo & Van Der Heide, 2016; Westerwick, 2013) have examined online credibility of physicians through the analysis of web site design and images of a physician, only limited research exists in connection with the bandwagon heuristic and perceptions of doctor credibility (Jucks & Thon, 2017).

In the study, we sought to understand how bandwagon (peer-reviews) and achievement heuristic cues influence the credibility perceptions of physicians based upon their online profiles. We conducted a 2 (online peer rating: one- v. five-stars) x 2 (number of achievements: one v. five achievements) using an online questionnaire. Participants (N = 140) first encountered a scenario where they required a heart surgeon and then received one of the four physician profile stimuli.

After examining the stimuli, participants answered questions measuring both competence and

trustworthiness. Participants ranked four variables at the end of the survey pertaining to which variable may have exerted the most influence in their perceptions of the doctor's credibility. The variables ranked by the participants included: (a) number of accomplishments, (b) peer testimony, (c) lack of picture, and (d) title of the doctor.

Through statistical analysis, we discovered two underlying themes within the findings. Participants tended to rate competence higher than trustworthiness, indicating that users may perceive a physician as competent but not trustworthy. Although a patient may perceive a physician as competent or trustworthy, patients may not necessarily consider both when determining credibility. Additionally, the number of achievements tended to influence the perceptions of both competence and trustworthiness more than the inclusion of peer reviews. Therefore, physicians should include some achievements or accolades on their online profiles to positively influence patient's perceptions of credibility.

With our ranking variable, we discovered one theme relating to the influence of peer-reviews on perceptions of credibility. Participants indicated that peer-reviews most influenced their perceptions of credibility only when the online profile contained one-star. With participants highlighting peer reviews as most influential when containing one-star, we can extend the research of Lin, Spence, & Lachlan (2016) and posit that negative reviews can result in more detrimental outcomes than a lack of reviews.

Although many researchers (Go et al., 2014; Jucks & Thon, 2017; Lee & Sundar, 2013; Lin & Spence, 2018) have examined the effects of bandwagon cues and judgments of online credibility, our findings suggest that patients perceive credibility using a combination of cues. Practical implications include how physicians can utilize different heuristic cues in increasing their levels of perceived trustworthiness and competence with both current and potential patients.

# U.S. Public Understanding of the Human Microbiome: Implications for Provider-Patient Communication about Illness

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Introduction:

With partially preventable and modifiable illnesses on the rise in the United States (CDC, 2014; Sturm, 2013), and threats to global health increasing in severity (e.g., CDC, 2016), healthcare systems are turning to primary care providers to carry out preventative counseling and interventions with patients (WHO, 2019). Increasingly, the medical community recognizes that the human microbiome, or the microbes that live in and on the body (e.g., bacteria, bacteriophages, fungi, protozoa, and viruses), is integrally connected to health and wellness due to its involvement in multiple physiological processes and illnesses (Ursel, Metcalf, Parfrey, & Knight, 2012). For example, disruptions in the microbiome can contribute to weight gain, high cholesterol, anxiety, and pain (e.g., Carballa et al., 2015; Thaiss et al., 2016). Primary care providers may find it useful to reference the microbiome when discussing connections between wellness, lifestyle, diagnoses, and treatments, and trying to motivate patients' health behavior change. However, the utility of microbiome-based explanation and motivational messaging likely hinges on public understanding of the microbiome, and providers' capacity to supplement that understanding where necessary. It is therefore important to understand what the public knows about the microbiome and what misconceptions they hold:

RQ1: How well does the U.S. public currently understand the human microbiome?

Patient awareness of their own knowledge (or lack thereof) about health also has the potential to influence responsiveness to providers' education and influence. When patients have but do not recognize their health knowledge gaps or misconceptions, they will typically be more resistant to health messaging that contradicts their own thinking (Rapp & Braasch, 2014). Thus, providers who reference the microbiome in discussion with patients may be met with greater resistance if patients do not know what the microbiome is or how it functions and lack awareness of their ignorance. Thus, it is important to examine how accurately members of the public can assess their own knowledge about the microbiome.

RQ2: What is the association between actual and perceived public understanding of the microbiome?

Method:

An analysis of survey responses from a geographically, racially, and educationally representative sample of U.S. citizens (N = 1010) to identify observed and perceived public knowledge about the human microbiome is in progress. Participant knowledge was measured using a single open-ended item (i.e., "As you understand it, what is the microbiome of the human body?"). A quantitative coding scheme was deductively developed to assess participant understanding that the microbiome (a) consists of microorganisms, (b) exists in or on the human body (i.e., is not made by the body), and (c) is healthy and normal (i.e., is not harmful). A single item was used to measure participant's perceived knowledge about the microbiome on a 5-point Likert-type scale (1 = Very Low, 5 = Very High). A correlation analysis will be employed to test the association between observed and perceived participant understanding of the microbiome.

# (Un)Like Strategies: Combining Narratives and Didactic Messages to Improve Attitudes Towards Effective Contraception

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INTRODUCTION. Adolescents in the United States experience one of the highest rates of unintended pregnancies in the developed world, with a disproportionate number falling on Latina and Black teens. This disparity can partially be attributed to differences in access to sexual health information. Notably, young women of color tend to rely on riskier contraceptive methods such as condoms (Kusunoki et al., 2016) as opposed to more effective Long-Acting Reversible Contraceptives (LARCs) such as IUDs and implants (e. g., Dehlendorf et al., 2014) Thus, understanding how to craft messages regarding effective contraceptive methods may go a long way in reducing racial/ethnic health disparities.

Narratives have been useful when communicating health-related messages to diverse populations, positively affecting knowledge, attitude, and behavior (e.g., Murphy et al., 2015). Recent meta-analyses that assessed the impact of narrative versus didactic health messages, however, found only limited evidence for the superiority of narratives (Shen, Sheer, Li, 2015). Moreover, it is still unclear whether narratives are best utilized as a substitute for or complement to didactic information. To address these gaps, the current study examines the combined use of narratives and didactic messages and their potential to improve reproductive outcomes.

METHOD. To test the effect of content format on attitudes and behavioral intentions toward using LARCs, a sample of 482 Black, Latina, and non-Hispanic White adolescent women aged 16 to 19 were recruited from Qualtrics. Participants were randomly assigned to watch one of three film conditions (narrative, didactic, or narrative+didactic) or to a no-message control. The narrative film condition consisted of three vignettes that followed four young Black and Latina women as they helped each other navigate relationships while modeling positive and negative behavior. The didactic version of the film provided the same health-related information with two PSA-style messages. Participants in the narrative+didactic condition were exposed to a film that incorporated the aforementioned vignettes and PSAs.

RESULTS. The results of the ANOVA indicated a significant effect of the experimental manipulation on attitudes toward IUDs ($F(3,481) = 5.84$, $p = .001$) and implants ($F(3,481) = 4.54$, $p = .004$), as well as intent to use implants ($F(3,481) = 5.52$, $p = .001$), but not IUDs ($F(3,481) = 2.33$, $p = .074$). Post-hoc comparisons using the Tukey HSD test indicated the scores for all outcomes were significantly higher among those exposed to the different versions of the stimulus compared to the no-message control condition but there were no significant differences between participants in the experimental conditions. Further, a two-way ANOVA with experimental condition and race/ethnicity as fixed factors did not retrieve significant interactions, indicating that all racial/ethnic groups equally benefited from exposure to information regarding LARCs, irrespective of whether it was presented in narrative, didactic, or narrative and didactic format.

CONCLUSION. The findings add further nuance to the interplay between narrative and didactic messages, suggesting that stories and didactic information can go together without interfering with circumventing the influence of each format.

**Understanding Barriers to Retention in HIV Treatment among HIV Positive Members of Key Population Groups**

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In the last several years in Kenya, significant progress has been seen in the implementation of programs meant to substantially push forward HIV prevention, care and treatment in key populations – men who have sex with men, sex workers, and people who inject drugs. However, despite this progress, recent reports reveal a gap in retaining HIV positive members of these populations in HIV treatment services. Recent data show that key population programs are doing a good job in reaching and testing these populations, but these programs are lagging in retaining in treatment key populations who test positive for HIV 1. Lack of retention in HIV treatment not only ensures that HIV incidence rates increase 2,3,4, it also increases mortality rates from AIDS related illnesses and malignancies 5,6,7.

To understand what barriers contribute to lack of retention among HIV positive members of key population groups, and to understand what has been done to encourage retention, interviews with 20 program workers, health care workers and HIV positive members of key population in Kenya were done. Their perceptions of the contributors to the attrition of HIV positive members of key population groups from the HIV treatment continuum were assessed. Participants were recruited from three key population organizations and two healthcare facilities in Kenya. Participants were paid $10 (KSH 1,000) for their time.

Themes that emerged from the interviews focused on barriers. Individual barriers such as substance abuse, hopelessness, stigma, disclosure issues, faith-based healing, migration and complacency; and structural barriers such as the location of the comprehensive care center in linking facilities, mishandling by health care workers after missed appointments, under-staffing at health care facilities, and impersonalized care emerged in the interviews. Systemic barriers emerged, most notably, health care facilities had no way of knowing whether a person living with HIV had dropped out of care or had started treatment elsewhere after migration unless the person called to ask that their name be transferred from one facility to the other. A centralized computerized system that could be used to follow up on or monitor patients would facilitate tracking patients across Kenya.

Innovative ways to improve retention include, the use of peer navigators to follow up with HIV positive individuals that have defaulted from treatment, social support groups held by health facilities and key population organizations, storage of medication in key population organizations drop-in centers for HIV positive patients who have not disclosed their status to family members, and having antiretroviral therapy dispensing sites within key population organizations.

Finally, when asked what should be done to improve retention, key population organizations program workers suggested that peer navigators who work in the capacity of volunteers should be made full time employees of the organization and all key population organizations should be made antiretroviral sites because members of key population groups viewed the organizations' drop-in centers as safe spaces.

This pilot work demonstrated the need for programs in Kenya to work on reducing stigma and facilitating access to treatment for key populations.

# Understanding E-Cigarette Prevention Ad Effectiveness: A Comparison of Message and Effects Perceptions

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Background. The United States is currently experiencing a national epidemic of e-cigarette use among youth, with nearly 30% of high school students reporting vaping in the past 30 days. This has added new urgency among researchers and practitioners to develop effective youth vaping prevention campaigns. Development and selection of youth tobacco prevention ads commonly relies on perceived message effectiveness (PME) ratings, but such ratings have seldom been applied to e-cigarette prevention. We compared two types of PME to determine which one better predicted the actual impact of e-cigarette prevention ads on adolescents: message perceptions (general perceptions of an ad) or effects perceptions (perceptions of how an ad would affect me). We also aimed to examine the impact of e-cigarette prevention ads on risk beliefs, attitudes toward vaping, and intentions to vape.

Methods. Participants were a national convenience sample of 543 adolescents aged 13-17, recruited in 2019 through a standing panel. In an online experiment, we randomized participants to one of two conditions: 1) two The Real Cost e-cigarette prevention ads developed by the Food and Drug Administration (FDA condition) or 2) two information-only e-cigarette ads developed by the Mayo Clinic (control condition). After ad exposure, we assessed message perceptions (6 items; α=.93) and effects perceptions (13 items; α=.96). We also assessed actual impact of ads on risk beliefs about vaping (9 items; α=.93), attitudes toward vaping (3 items; α=.89), and intentions to vape (3 items; α=.95). We used descriptive statistics to characterize the sample and independent samples t-tests to assess differences between experimental conditions. We also computed multivariate linear regression analyses adjusting for demographic and smoking-related covariates to examine associations between each type of PME and adolescents' risk beliefs, attitudes toward vaping, and intentions to vape.

Results. Mean participant age was 15 years, and most were White (80%). Roughly half (51%) were female and 15% identified as Hispanic. Approximately one-third of participants were current e-cigarette users. Compared to control, FDA e-cigarette prevention ads scored higher on both message perceptions (p<.001) and effects perceptions (p<.001). With respect to actual impact, FDA ads increased risk beliefs about vaping (p<.001) and negative attitudes toward vaping (p<.001), and reduced intentions to vape (p<.05). In separate multivariate analyses, both effects and message perceptions were significantly associated with risk beliefs about vaping, attitudes toward vaping, and intentions to vape (all p<.001). Effects perceptions, however, explained more total variance than message perceptions in risk beliefs ($R^2$=.57 vs. $R^2$=.33), attitudes toward vaping ($R^2$=.45 vs. $R^2$=.35), and intentions to vape ($R^2$=.46 vs. $R^2$=.37).

Conclusions. Among adolescents, FDA's vaping prevention ads were more effective than control ads as indicated by both perceived and actual impact measures. While both types of PME predicted ad impact, effects perceptions predicted more variance in actual effectiveness outcomes than message perceptions and, we speculate, may be superior as an indicator of ad impact. This is an important finding given that the FDA assesses only message perceptions in their current youth tobacco prevention campaigns.

**Understanding Factors Influencing Communication Skills around Condom Use Among Young Adults**

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Introduction

Sexually transmitted infections (STIs) are a major concern for public health officials. A recent CDC analysis of U.S. STI data between 2013-2017 noted that rates of gonorrhea increased 67%, syphilis rates nearly doubled, and more than 1.7 million new cases of chlamydia were reported to the CDC in 2017 (CDC, 2018). Additionally, epidemiologists have warned that progress in HIV prevention has stalled, such that U.S. HIV infection rates are no longer declining, but have plateaued in recent years (CDC, 2019). Health professionals consistently recommend the male condom as the most effective method to prevent the spread of STIs and HIV (WHO, 2015). Yet, condom use rates are low. A national study conducted between 2011 -2015 found that of women and men between the ages of 15-44 years old who had sex with someone they were not married, engaged, cohabiting, or in some steady relationship with only 41.5% said they used a condom the last time they had sex (Copen, 2017).

Research has found that most people don't use condoms despite understanding their benefits. While many factors influence condom use, studies have identified condom communication as a key factor (French & Holland, 2013; Noar et al., 2006; Peasant, et al., 2015). A meta-analysis of 121 condom use studies that compared 44 different psychosocial variables on their association to reported condom use concluded communication about condoms had the largest effect size of all of the analyzed variables (Sheeran et al., 1999). Despite emphasis in the literature that condom communication is associated with condom use, very little research about how to encourage healthy condom communication exists especially research that considers the impact of dating apps. Understanding how sexual communication about condoms occurs and where the gaps in understanding of skill may be is critical to addressing this public health crisis.

Method

10 focus groups were conducted with a total of 40 undergraduate students (12 males and 28 females) enrolled at a large public university. The focus groups were conducted separately by gender with one specifically advertised as an LGBTQ identifying group. Moderators were trained students of the same gender as the focus group participants. The focus group topic guide asked about knowledge, attitudes, practices, and behaviors toward condom use with a focus on communication about condom use. All focus groups were audio recorded and transcribed. A coding scheme was developed based on the theory of planned behavior (TPB) constructs (i.e., attitudes, norms, perceived behavioral control) and after an initial review of the transcripts, non-TPB themes were also identified for coding. Transcripts are being coded using the Coding Analysis Toolkit (CAT) software for organization and to establish intercoder reliability.

Preliminary Results and Conclusion

Preliminary analysis reveals a consistent lack of condom use among college students associated with perceived norms around casual sex within friend groups, persistent double-standards for college-aged women regarding stigma around initiating condom use, and overall lack of communication efficacy. Findings suggest that students are open to learning condom communication skills. The full analysis will be completed in Feb. 2020.

# Understanding the Antecedents of Medical Mistrust: Testing the Ecological Medical Mistrust Antecedents (EMMA) Model

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Medical mistrust, distrust in the motives of medical personnel and institutions (Omodei & McLennan, 2000), has been associated with decreased likelihood of engaging in several health behaviors (e.g., Meng et al., 2016; Morgan et al., 2008). As a result, medical mistrust is a pervasive barrier that cuts across health contexts and topics. Thus, addressing medical mistrust is a critical step towards improving health outcomes. This may be of particular importance for Black Americans who consistently report higher levels of medical mistrust than their White counterparts (e.g., Thompson et al., 2003; Tekeste et al., 2018). Furthermore, the relationship between race and medical mistrust exists when controlling for a variety of factors (e.g., trust in physician, Brandon et al., 2005; demographic variables, Durant et al., 2011), suggesting that race may play a critical role in our understanding of medical mistrust. Despite calls for investigation into medical mistrust (e.g., Adams & Simoni, 2016; Scharff et al., 2010), little work has been done that explicitly examines medical mistrust as a phenomenon of interest, focuses on antecedents of medical mistrust, or investigates the nuanced role of race.

To address these gaps, the current study tests a new model – the Ecological Medical Mistrust Antecedents (EMMA) model. The EMMA model takes previously noted antecedents (see Hammond, 2010) and uses Street's (2003) ecological model of medical encounters to reconceptualize these antecedents. It posits that negative health-care socialization (NHS), negative health-care experiences (NHE), and racial discrimination experiences (RDE) influence medical mistrust and that these relationships are mediated by perceived racism and perceived financial corruption in health care.

Black (n = 204) and White (n = 232) participants completed a survey that assessed the constructs associated with the EMMA model. Analysis was conducted utilizing structural equation modeling (SEM), specifically using a multigroup model. For both Black and White participants, there was a) an indirect effect of personal NHE on medical mistrust via perceived racism and b) indirect effects of both personal NHE and vicarious media NHE on medical mistrust via perceived financial corruption. For White participants, there were also indirect effects of vicarious interpersonal NHE, personal RDE, and vicarious interpersonal RDE on medical mistrust through perceived racism. For Black participants, vicarious media RDE exerted an indirect effect on medical mistrust via both perceived racism and perceived financial corruption.

Based on these findings, the inclusion of communication expands our understanding of medical mistrust.

The current study suggests that scholarship's previous focus on the Tuskegee Syphilis Study (Jaiswal & Halkitis, 2019) is limiting. Hearing stories (vicarious interpersonal experiences) and exposure to news stories (vicarious media experiences) showing negative health-care experiences or racial discrimination experiences influence medical mistrust. Not only this, but also the ways in which these communicative events influence medical mistrust, differ for Blacks and Whites. As scholars interested in improving health outcomes answer Benkert et al.'s (2019) call for investigations into the antecedents of medical mistrust, it will be important for communication scholars to be at the forefront of this work.

# Using a Walking App Diminishes Health Literacy Differences between Socio-economic Strata in Dutch Older Adults

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Health literacy is particularly prevalent in people from low socio-economic background. We investigated whether the use of health apps can reduce health literacy discrepancies in adults from low, middle, or high socio-economic background. We focused on walking apps as they are the most commonly used health app.

Respondents were 1346 older adults, and members of national survey panel. We assessed health literacy using the e-health literacy scale, that questioned participants about (e.g.) their confidence to find, retrieve, rate, and use health-related information from health apps. Answering categories ranged from 1 (=totally disagree) to 7 (=totally agree). Socio-economic status was derived from obtained educational background, a measure more predictive of SES-related health disparities than income. We used national guidelines to qualify participants as either low, middle, or high socio-economic status. Walking app usage was assessed by asking participants to indicate whether they were either (1) currently using a walking app, (2) no longer using a walking app, but had used in the past, or (3) currently not using a walking app and not having used one either. Data were collected in August 2019.

Mean age was 52.5 years (SD=15.3), and little over half (n = 704, 52.3%) was female. Average literacy levels were above midscale (M = 4.5, SD = 1.4) and the majority had never used a walking app (n = 790, 58.7%), while about a third (n = 429, 31.9%) was currently using a walking app. Less than 10 percent (n = 127, 9.4%) was a previous user. There was a higher proportion of never users amongst low socio-economic respondents (62.8%) than amongst high socio-economic respondents (52.7%), $x2$ (4) = 13,735, p = .008.

There was an effect of app use status $F(2, 1337) = 98.63$, $p < .001$ – health literacy scores were lower in never users (M = 4.1, SD = 1.5) than in previous (M = 5.0, SD = 1.0) or current users (M = 5.2, SD = 0.9) (all ps < .001). There was also an effect of socio-economic status, $F(2, 1337) = 15.85$, $p < .001$, on health literacy scores - health literacy scores were lower in low SES participants (M = 4.0, SD = 1.5) than in middle (M = 4.6, SD = 1.3) or in high SES (M = 5.0, SD = 1.2) adults (all ps < .001). Finally, there was a interaction between socio-economic status and app use status $F(4, 1337) = 2.14.$, $p = .074$, on health literacy scores. Amongst never-users, differences in health literacy scores were much more pronounced between low SES adults and middle and high SES adults (Mdifference = 0.9) than amongst current users (Mdifference = 0.4).

In older adults, health literacy scores are lower in low SES people and in people who have never used a walking app. Differences in health literacy between low, middle, and high SES adults diminish when older adults are or have used a walking app. These findings suggest that stimulating health app use can diminish health literacy levels and, potentially, health disparities.

# Variation in Media Coverage of Tobacco affects Self-Reported Scanning: Evidence from Three Years of Weekly Content and Survey Data

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The persuasiveness of causal claims made about the effects of media exposure on behavior based on survey data can be undermined if both exposure and outcome variables are measured in a common survey instrument. Methodologists describe this as a concern about endogeneity- the risk that temporal order between variables is uncertain, and that an observed association may merely reflect the effects of confounding variables. One proposed solution is to make the measurement of exposure independent to the measure of outcome, specifically by assessing exposure indirectly by content analysis of the media environment. This solution assumes that as the media environment varies in its content, over time or over places, individual exposure to that content will vary as well (Kelly et al, 2009; Niederdeppe, 2014; Liu & Hornik, 2016). The study reported here tests this assumption.

We collected, every day, between mid-2014 and mid-2017 both long-form texts (from broadcast TV and radio news transcripts, the AP newswire, 50 popular U.S. newspapers, and more than 100 websites popular among young people) and all tobacco-relevant tweets. Over this period, we collected a total of 125,165 long form texts and about 51 million tweets. The texts were located using a combination of dictionary and supervised machine-learning text analysis tools (Gibson et al., 2019). During the same period, we also collected a weekly rolling cross-sectional and nationally representative phone survey data which eventually included 11,847 U.S. youth and young adults. The survey instrument contained a question asking how frequently the respondents have come across smoking-related information (called scanning): "In the past 30 days, did you come across information about cigarettes or tobacco online, in the media, or from other people even when you were not actively looking for it?" (if yes) "Did you come across such information once or twice, three to ten times, or more times than that?" The mean for this measure, calculated using midpoints of categories (e.g., once or twice = 1.5), was 2.15, with a standard deviation of 3.15.

We examined whether media coverage (long-form and Twitter) about tobacco products from the content analysis predicted survey-reported scanning of smoking-related information during the given period. Each respondent was assigned content scores reflecting the average volume of long-form (mean = 2191, SD = 314) and Twitter coverage (mean = 44194, SD = 9637) about tobacco products over the previous 28 days. The results from regression analysis, clustered for the 1,140 interview dates, with both content variables standardized, indicated that the volume of Twitter coverage about tobacco products other than electronic cigarettes was positively associated with the frequency of scanning smoking-related information (B = .045, robust standard error = .016, p < .01). The long-form coverage was not correlated with frequency of scanning (B = -.008, robust standard error = .007, ns). Our findings provide mixed evidence that content analytic estimates of variation in media coverage predicts variation in survey measured self-reports of exposure. Further considerations will include questions about possible thresholds for effects and the match between content analyzed and respondent sample populations.

# "We Named My Brainstem Lesion Harold": A Normative Approach to Humor Use in Young Adult Cancer Patients and Their Supporters

### *Nick Iannarino, University of Michigan-Dearborn*

Young adult cancer patients (i.e., 18-39; YAs) have been shown to use illness-related humor to help them discuss their cancer experience more openly (Chapple & Ziebland, 2004). However, we do not know the range of ways YA patients and their social network members use humor to make sense of and cope with their illness. Thus, I use normative rhetorical theory (NRT; Goldsmith, 2019) to describe the dilemmas and meanings of humorous messages and the features that make these messages better or worse in this context.

## Method

I conducted individual narrative interviews with 21 YA patient-close supporter dyads, 1 triad, 9 individual YA patients, and 8 individual supporters (N=62). I used surprise-liberation theory (SLT; duPre, 1998) to define humor as a surprising deviation from an expectation that causes a pleasurable liberation. I also used constant comparison (Strauss & Corbin, 1998) to explore connections between NRT, SLT, and participants' descriptions of their uses and evaluations of humorous messages.

## Findings

Participants used cancer-related humor with social network members to temporarily liberate themselves from their rumination and fear. By demonstrating that it was okay to joke about their cancer, most participants felt that violating others' expectations of the staid victimhood that typically surrounds cancer made interactions with loved ones easier, which set the tone for the type of support they wanted to receive in return. Humor was used to remind others that despite their diagnosis, participants' valued identities and relationship with the recipient were not altered. However, they felt the need to also acknowledge that things were NOT normal, and they attempted to address the absurdity of their situation (and feelings of embarrassment and vulnerability) by poking fun at extreme side effects, fertility preservation, loss of body parts, and altered appearance.

However, participants struggled to use humor effectively with audiences who did not appreciate their sense of humor in general or who were not comfortable with joking about cancer. Participants who took for granted that they were more used to their cancer experience than others tended to shock rather than liberate with their humor use. Others' attempts to use humor fell flat when jokes about participants' experiences felt malicious and repetitive. Some participants felt that humorous slogans like "Save the Tatas" helped them rally support and gain control, while others found them dehumanizing.

## Implications

This study extends NRT to a new communicative task within an understudied context. SLT helps explain why humor can be normatively effective in helping YA cancer patients and their close supporters balance task, relational, and identity meanings. However, while participants used cancer-related humor to open up conversations about their illness experience without threatening their need for normality, they were also faced with the knowledge that they HAD been irrevocably changed by their cancer experience. Therefore, participants faced a paradoxical need to balance their humor to stress normalcy while also acknowledging the difficult changes they had experienced. Practically, this study can provide tangible suggestions for how to help patients and supporters use humor more successfully in YA cancer contexts.

**We Talked About Our Hookups: A Diary Study of Sexual Communication Among U.S. College Women**

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For many young women, college is a time when their sexual behaviors and attitudes change. Sexual activity tends to increase during college, with many students engaging in casual sexual encounters and risky sexual behavior (American College Health Association, 2017; Scott-Sheldon, Carey, & Carey, 2010). Communication with others plays a major role in these changes (Gause, Brown, Welge, & Northern, 2018; Zelin, Erchull, & Houston, 2015), yet there is little information about how college students, particularly women, actually talk about sex on a day-to-day basis.

One of the most effective ways to understand daily behavior is through the use of diaries, which tend to result in higher reports of risky or taboo behavior (Fisher & Lee, 2014). To understand day-to-day sexual communication among young women, 96 U.S. college women kept a sexual communication diary seven days in a row, generating 1211 instances of interpersonal communication about sex. Sexual communication was defined as any communication related to sex, including sexual health, sexual behaviors, and social issues related to sex. For each conversation participants recorded the conversation length, tone, medium, and relationship with the interlocuter. They also described the conversation in detail. Content analyses of the latter were conducted to determine topic and function of the conversations.

Most conversations were face-to-face, casual or humorous, and lasted about 15 minutes. The vast majority were with friends. The most common topics were previous sexual encounters, dating and relationships, potential sexual activity, desires and likes, and sex in the media. Sexual assault and sexual health were rarely discussed. Regarding the function of conversations, the most common were sharing opinions, recapping sexual activity, gossiping, exchanging advice, and joking around.

Together the findings suggest that sex appears to be a somewhat common topic for college women, but serious topics and conversations with partners are scarce. The findings are also consistent with research that young women tend to avoid talking about sexual risk (Bowleg, Lucas, & Tschann, 2004; Horan & Cafferty, 2017). This has important implications for health promotion efforts targeted at college students, particularly women. Because women talk mostly to their friends about sex, peer educators may be an effective vehicle for transmitting sexual health messages. Other research has found peer sex education to be effective at increasing safer sex behaviors (Layzer, Rosapep, & Barr, 2014; Roberts-Dobie, Rasmusson, A., & Losch, 2018).

The findings also show that talking about sex has social importance. Women talked to exchange opinions, recap, gossip, exchange advice, and make each other laugh. They also talked about many personal issues, such as sexual encounters and desires. This suggests that young women may be trying to make sense of new sexual experiences and they are turning to their peers to organize and interpret those experiences (Garcia, Reiber, Massey, & Merriwether, 2012).

Communication about sex is an important aspect of sexuality. Our study provides a better understanding of how young women talk to each other about sex, which is crucial to developing educational materials and interventions aimed at improving their sexual health and well-being.

# "What Comes to Mind when you Hear HPV?" Gender Differences in Thoughts on HPV and HPV Vaccination Rates among College Students

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Background: The Centers for Disease Control and Prevention (2019) estimate that the human papillomavirus (HPV) is contracted by 14 million Americans, leading to 35,000 cases of cancer each year. The HPV vaccine series has nearly a 100% success rate in preventing genital warts and cervical cancer. Although the vaccine is quite efficacious, there are a number of individuals in the "catch-up" age range (18 -45 years) who have not been vaccinated. These individuals are likely sexually active and could be spreading/contracting HPV. Research has identified knowledge gaps regarding HPV/HPV vaccine among college students, but has relied mostly on standardized quantitative measures. Current research lacks a consensus on baseline reactions or understanding of HPV and its associated risks. The purpose of this study was threefold: (1) to determine what college students think of when they hear HPV, (2) compare college men and women's responses to the question above, and (3) compare college men and women's HPV vaccination uptake rates and series completion rates. The results may inform HPV vaccination related conversations that providers have with this population.

Method: College students (N=668), who had heard of HPV, from two large universities in the Southeastern United States completed an online survey about HPV and HPV vaccination. The participants ranged in age from 18-45 (M=20.49, SD=3.43 years) with the majority being female (58%), White (62%), single (59%), and 72% had engaged in at least one sexual act.

Results: The sample aligned with prior research in that females were more likely to have started the vaccine series ($F_{(2,665)}$=3.24, p=.040) and to have completed it ($F_{(2,662)}$=6.29, p=.002). Participants were asked to write the first thing that came to mind when they heard "human papillomavirus (HPV)" and STD (n=124, 18.6%), disease (n=87, 13.0%), and vaccine (n=74, 11.1%) were cited most. Sex (n=36, 5.4%), STI (n=30, 4.5%), virus (n=23, 3.4%), AIDS/HIV (n=14, 3.0%), cancer (n=19, 2.8%), infection (n=19, 2.8%), cervical cancer (n=17, 2.5%) and warts (n=17, 2.5%) were the only others accounting for at least 2.5% of the responses. Males mentioned STD (n=62, 22.5%), disease (n=37, 13.5%) and vaccine (n=23, 8.4%) most frequently whereas women responded most often with STD (n=62, 16.0%), vaccine (n=51, 13.1%), and disease (n=50, 12.9%).

Implications/discussion: The low number of individuals who mentioned cancer and genital warts, which are serious effects of contracting HPV, indicate the need for further education. Results call attention to the intersectionality of cancer communication and health education. When designing communication strategies for providers or health campaigns advocating HPV vaccine uptake, research on cancer risk communication should be considered. Results further indicate a continued need to reduce the discrepancy in vaccine uptake based on gender and the need to educate college students about HPV related cancers beyond cervical cancer. Research has shown that interventions engaging both peers and providers are effective at increasing HPV vaccine uptake; results from this study offer insight into the exact phrasing college students may use when discussing HPV and can therefore be used by providers to initiate conversations with college student patients.

# What do Social Media Influencers Say about Health in China? A Theory-Driven Content Analysis of Top 10 Influencers on Sina Weibo

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Background: Social media influencers are micro-celebrities equipped to disseminate information to their huge numbers of followers (Senft, 2008). They play an essential role in communicating health information as well as misinformation to the public. This paper examines the contents of the top ten health influencers on Sina Weibo, a microblog site in China equivalent to Twitter with over 462 million users. Guided by the Extended Parallel Processing Model (EPPM) (Witte, 1992), we ask the following research questions: 1) What kinds of health-related topics are communicated by leading health influencers on Sina Weibo (in terms of different diseases, risk factors, and benefits) and 2) To what extent do these posts display threat appraisal (severity and susceptibility) and efficacy appraisal (self-efficacy and response efficacy)?

Method: First, we used purposive sampling and downloaded all posts of top 10 health influencers as recognized by Sina Weibo published between January 1st, 2018 and October 1st, 2019 (n=93,568). Next, systematic random sampling method was used to collect 100 posts from each account, which comprised 731 posts after excluding posts unrelated to health. Codebook included demographic information of these posts, health topics and EPPM constructs. All the coding categories reached relatively high intercoder reliability (k ranges between .72 and .97). Data analysis involved a series of basic frequency analysis.

Results: In terms of health topics, only 45% posts were related to specific diseases, among which female reproduction-related diseases (n=78, 10.9%) were most often mentioned, followed by cancer (n=48, 6.7%) and dermatological conditions (n=45, 6.3%). Meanwhile, risks associated with cosmetic procedures (n=91, 12.8%) and risks associated with pregnancy (n=70, 9.8%) were most frequently discussed. With regard to benefits, benefits of beauty and cosmetic products (n=79, 11.1%) as well as healthy diet and nutrition (n=59, 8.3%) got the most coverage. When it came to EPPM constructs, both severity (n=220, 30.9%) and susceptibility (n=116, 16.3%) seldom appeared in health messages while 64.7% posts involved self-efficacy, response efficacy or both (n=479).

Discussion: Overall, women's health was the most dominant topic discussed by the leading health influencers on Weibo. The results showed that female reproduction-related disease, beauty-related risks and benefits occupied the majority of health topics. Women appear to be the primary target of health influencers. Moreover, most posts included messages about individual efficacy and response efficacy while severity and susceptibility gained limited exposures in health messages. It is vital for practitioners to design more effective health messages that has the potential to be translated to behavior changes. Last but not the least, satisfying the needs of different populations demands relatively equal allocation of diverse sorts of health messages.

**What Happens when Illness becomes a Reality? Individuals' Evolving Uncertainty Management about Family Members' Health**

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When illness becomes a reality in families, some questions about whether and to what extent a family member is truly ill are resolved. Yet, some uncertainties may remain, change form, or "chain-out" to other forms of uncertainty (Babrow, 2001; Brashers, 2001). Current research lacks the temporal orientation necessary to better understand the ways in which illness uncertainty is (not) managed in families. To elucidate this process, we interviewed individuals who did not initially believe a family member's illness(es), but began to believe to some extent. Our guiding research questions were: RQ1: How do meanings and sources of uncertainty evolve? RQ2: How do individuals' strategies for managing their uncertainty shift?

We recruited 33 US adults (M age = 39.85, SD = 11.33; 51.5% male) across the US through Amazon's Mechanical Turk and paid them $15US for an interview conducted through Google Voice. We asked participants to reflect upon the process by which they started believing their family members' health issues existed or were more severe, focusing on the evolution of their uncertainty and uncertainty management.

For RQ1, we found that once participants accepted or began to accept the reality of their family member's illness, they continued to experience uncertainty in medical, social, and personal domains. Concerning medical uncertainty, some still questioned the diagnosis and severity of the illness; some were unsure about how to manage or treat the illness and its course; some did not know what to expect the illness to "look like" in their family member's behaviors; and some wondered if they were also susceptible to the illness. Participants also reflected on feelings of social uncertainty, describing how they did not know how to communicate or support their family members as persons living with mental illness, for example. Some expressed uncertainty about the kind of relationship they could have with their family member moving forward. Finally, participants described having personal uncertainty, experiencing role and identity ambiguity in the relationship; for instance, how to balance emergent caregiving with their other roles, e.g., spouse, child.

For RQ2, we found that participants managed their ongoing uncertainty both intra- and interpersonally. Intrapersonally, participants described managing regret, sadness, and guilt for not believing family members and attending to their health issues sooner. They also described trusting the process and being patient with their family member.

Interpersonally, participants shared how they adapted to what became chronic uncertainty by providing support and coping with their family member. This negotiation included coordinating with other family members to provide support and to seek and exchange information. It also included re-envisioning relationships with ill family members, for instance, finding creative ways to spend time together given family members' health limitations.

Our emphasis on the evolving nature of uncertainty paints a more complex and realistic picture of how uncertainty is experienced and managed in families as the reality of illness comes into focus. This study has implications for theorizing by illustrating how uncertainty management is an ongoing, layered, and often non-linear process that people negotiate intrapersonally and interpersonally with their family members.

# What is the Precursor in mHealth System Use? The Time Dynamics of Communicative Use on an mHealth Application

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Background: One goal of mobile health (mHealth) systems is to facilitate interactive communication among users, healthcare providers and information sources (Fiordelli, Diviani, & Schulz, 2013). Understanding the use of mHealth communicative functions can provide insights to improve system quality and evaluation criteria (Kim, Ray & Veluscek, 2017; Chib & Lin, 2018). Many mHealth studies have focused on input factors such as accessibility or usability, and output factors such as process efficiencies for certain health outcomes (Chib & Lin, 2018), but few has investigated the interdependent relations between different uses of communicative functions (e.g., how earlier public posting behavior encourages later one-to-one messaging). We address this research gap using time series models to provide evidence that certain types of system uses can inspire subsequent system use, with the modes of interaction shifting with experience.

Objective: Our research examines different communicative sub-functions within a mobile health app developed to support addiction recovery and to see how they influence each other as time passes. Specifically, we investigated the interaction among two user activities (exposure vs. production) afforded by three distinct communicative functions (i.e., intrapersonal, dyadic, and public) for substance use disorders recovery. Six time series per user (N=255) were modeled to understand the interdependent dynamics.

Definitions: *Public (one to many communication) exposure:* Browse/read a list of discussion groups/pages/posts in the discussion room. *Public production:* Compose or edit a post in the discussion room. *Dyadic (one to one communication) exposure:* Browse/read a list of messages sent from the other user or archived. *Dyadic production:* Compose a message privately. *I:trapersonal exposure.* Browse/read past self-writing motivation journal entries/photos. *Intrapersonal production:* Compose a motivation journal only viewable to oneself.

Methods: We analyzed the number of clicks extracted from system log from 2014 to 2017. We categorized click counts based on (1) whether they were linked to exposure or production; and (2) which communicative function they reflect. Panel vector autoregression models (VARs) were adopted to capture the trends of interdependency and mutual influence in a time-series manner (Wells, et al., 2019; Box-Steffensmeier et al., 2015).

Results: Our data showed previous public exposure (with one-day lag) significantly boosted subsequent public production ($\beta = .005$, $p <.05$), dyadic production ($\beta = .001$, $p <.05$) and intrapersonal exposure ($\beta = .003$, $p <.05$). Previous intrapersonal production increased public exposure ($\beta = 2.458$, $p <.05$), suggesting a mutually reinforcing effect. Previous public production also improved dyadic production ($\beta = .01$, $p <.05$).

# "Where do I go from here?" Support Seeking and Message Characteristics

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Social support plays a significant role in human life, and receiving social support during times of crisis may be vital to human well-being. Social support is no longer bound to friends and family members, nor to any proximity boundaries. Online environments offer unique benefits to people in need of social support, including flexibility, convenience, and a sense of anonymity (Wright, 2016). Social support forums are an important resource for people experiencing an illness who lack others to communicate with (Wicks et al., 2010). Social support scholars have recently turned to the implications of computer-mediated-communication (CMC) and research shows that social support via CMC has the potential to have a larger impact than face-to-face interaction. Rains et al. (2016) found that compared to the face-to-face interaction, participants provided with social support via CMC experienced the most benefits, including the strongest motivation to receive support and the greatest changes in worry discrepancy. Due to the positive findings surrounding mediated support interactions, it is clear that an extension to this knowledge, examining how people seek support online and the nature of these support-seeking messages, is warranted. This study incorporates computational social science methods, including data scraping, data mining, and association rules, to obtain and analyze data from the prominent social support website dailystrength.org. The data set includes approximately 1500 original posts, and the first associated responses, from 15 forum topics (e.g., breast cancer, smoking addiction, depression). The posts were run through the Linguistic Inquiry and Word Count (LIWC) program, which is currently perceived as the gold standard in computerized text analysis. LIWC provides a broad range of social and psychological insights and, in our study of support forums, allows us to understand the underlying rules and associations regarding people's written interaction. This analysis included 32 additional variables such as title word count, mood level, number of comments, reply delay, and word count of the first reply. This study sought to understand: (a) what aspects of an initial post cause more people to provide support, (b) what types of support are offered by the first person to respond, and (c) if there are differences between forums. Results indicate that 92% of posts (approximately 22,000) received at least one response, responses that included emotion words were more likely to focus on positive emotions than negative, and support providers were significantly more likely to help the support seeker cognitively process their current situation. A key finding of this study indicates that people who are seeking support online are likely to receive it. This is especially important for those with a stigmatized illness, who are unable to obtain support from their offline network, and who may not be in close proximity to physical support groups. In addition, multiple variables indicated differences between forums. This finding suggests that research in support seeking and support behaviors needs to move beyond illnesses, in a general sense, into context-specific support behaviors for different types of illnesses. Other implications of this study, practical applicability, and future directions are discussed.

**Why Do Patients Deceive Their Providers? Judgment, Punishment, and Marginalizing Experiences**

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Often times, patients engage in deception or omit information when communicating with their health care providers (Curtis, 2015). In fact, patients find it difficult to share specific details with authority figures and providers (Lewis et al., 2011). This deceptive behavior can result in negative consequences, as patients might not receive the care that they need (Jung & Reidenberg, 2007). While previous research has identified motives as to why individuals may deceive their providers (Burgoon et al., 1994), little is known about this phenomenon. Thus, the current study seeks to better understand why individuals are deceiving their health care providers.

College students (N = 211) responded to both quantitative and qualitative measures associated with deception in health care settings in an online survey. Participants were aged between 18 to 44 (M = 20.76, SD = 3.15), were 42.7% men, 55.9% women, 0.9% nonbinary, and 0.4% identified as having another gender identity. The sample also included various racial/ethnic identities: 71.1% White/Caucasian, 10.4% Black/African American, 9.0% Asian, 4.3% of multiple racial/ethnic identities, and the remaining participants identified with other racial/ethnic identities. Data collection is currently ongoing with a broader population.

Independent sample t-tests found that patients who had deceived their provider (M = 3.99, SD = 0.66) trusted their provider significantly less than non-deceivers (M = 4.24, SD = 0.62), t(209) = 2.76, p = .006. Deceivers (M = 3.79, SD = 0.58) were also less satisfied with their provider than non-deceivers (M = 4.24, SD = 0.62), t(209) = 3.07, p = .002.

In the qualitative data, a few themes emerged regarding why individuals deceive their providers. The two most common reasons are to avoid judgment from others, specifically a present family member or the provider, and to avoid possible consequences for engaging in illegal behavior. Another theme was marginalizing experiences. Of the 131 deceivers, 27 indicated that the deception was due to feeling marginalized based one or more of their social identities. Some identities that individuals acknowledged as being marginalized include gender identities, age, sexual orientation, race/ethnic identities, and veteran status. Participant 19, for example, lied about his sexual activity because he feared being judged for identifying as bisexual and stated he "… didn't want to come out to anyone, including my health care provider." Participant 189 said he lied about his drinking habits because "I did not want to fit into the stereotype of alcoholic depressed veteran." When asked how they felt about deceiving their health care providers, some participants indicated that they were "regretful for not being honest," as stated by Participant 51. Most participants (22/27) indicated that they did not address this situation with their provider, and only four participants indicated that they changed providers.

These findings provide interesting implications for practice. Providers should cultivate trusting relationships with their patients, as this is not only related to the patient's satisfaction of the patient-provider experience, but also both trust and satisfaction can help avoid instances where the patient feels that deception is necessary.

# Why is it Difficult to Support Others Living with Mental Illnesses? Linking Mental Illness Uncertainty to Support Provision

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Individuals with mental illnesses often narrate how others are unsupportive of their experiences living with and managing their illnesses. However, we lack robust theoretical explanations for the provision of inadequate social support. Drawing from appraisal theories of uncertainty, we developed a model hypothesizing that individuals' uncertainty about others' mental illnesses is associated with fear/anxiety appraisals that decrease social support efficacy, in turn leading to less and poorer quality social support. Put differently, we predicted that fear/anxiety and social support efficacy mediate the association between mental illness uncertainty and support quantity and quality.

We recruited 300 individuals living in the US (Mage = 34.07, SD = 9.49; 50% female, 50% male) through TurkPrime who received US$3.50 for completing an online survey. Participants reported on friends (38.1%), family members (35.1%), and romantic partners (23.1%) who have had mental illnesses on average 10.20 years (SD = 9.01). Participants reported being aware of the mental illness(es) on average 6.05 years (SD = 6.59). We included measures of mental illness uncertainty (hereafter "uncertainty"), fear/anxiety, social support efficacy (hereafter "efficacy"), social support quantity (e.g., emotional, esteem, tangible, informational, network), and overall support quality. Using PROCESS, we tested six multiple mediation models: Models 1-5 for support quantity and Model 6 for overall support quality.

We found similar results for Models 1 and 2. Fear/anxiety and efficacy mediated the association between uncertainty and emotional and esteem support (total effect emotional, b = -.13, 95% CIs [-.19, -.06]; esteem, b = -.12, 95% CIs [-.19, -.05]). There was a negative indirect effect of uncertainty on emotional (b = -.20, 95% CIs [-.28, -.13]) and esteem (b = -.16, 95% CIs [-.24, -.08]) support through efficacy. There was a positive indirect effect of uncertainty on emotional (b = .18, 95% CIs [.12, .25]) and esteem (b = .13, 95% CIs [.07, .20]) support through fear/anxiety.

We found similar results for Models 3-5. Only fear/anxiety mediated the association between uncertainty and network (b = .16, 95% CIs [.10, .23]), informational (b = .19, 95% CIs [.08, .31]), and tangible (b = .15, 95% CIs [.09, .22]) support. Uncertainty had a negative direct effect on network (b = -.20, 95% CIs [-.32, -.08]), informational (b = -.14, 95% CIs [-.24, -.04]), and tangible (b = -.19, 95% CIs [-.30, -.07]) support.

For Model 6, fear/anxiety and efficacy mediated the association between uncertainty and overall support quality (total effect, b = -.36, 95% CIs [-.44, -.27]). There was a negative indirect effect of uncertainty on overall support quality through efficacy (b = -.30, 95% CIs [-.39, -.21]).

As hypothesized, uncertainty had a negative direct or indirect effect on all support types and overall support quality, partly through decreases in efficacy. Counter to predictions, fear/anxiety predicted support quantity for all types. Findings point to a difficult situation for support providers: although uncertainty motivates support provision by activating fear/anxiety, this effect may be undermined for forms of support that require complex communication skills (e.g., emotional, esteem, overall quality) through corresponding decreases in efficacy.

# Women's Agentic Role in Enabling and Dismantling Menstrual Health Taboos in India: A Structurational Analysis

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Recent studies report the need for menstrual health and hygiene management in India, highlighting a lack of awareness and reproduction of social taboos (MacRae, Clasen, Dasmohapatra & Caruso, 2019). Some prevalent taboos label menstruation as 'dirty' and prescribe a set of rules which limit behavior during menstruation including prohibiting entering religious areas or the kitchen, not touching pickle jars, and in some dire situations, staying outside of the home. Menstruation is often associated with physical conditions (i.e., cramps, headaches) and hormonal changes that require informational or emotional support, and strong cultural taboos create barriers to seeking support and normalizing menstruation.

Scholars suggest addressing issues around pain management, social support, and an enabling sociocultural environment, which reinforces the taboos for effective intervention in India (MacRae et. al, 2019; Hennegan, Shannon, Rubli, Schwab & Mendez-Torres, 2019). Such interventions are successful when planners understand existing structures and perceptions of their target groups. Therefore, structuration theory (Giddens, 1984), which captures the relationship between the agent (women) and structure (sociocultural norms around menstruation), was selected to explore the consensus and contradictions around menstruation. The theory emphasizes that the constitution of agents and structures are mutually impacting.

Data collection included 18 focus groups of college-going women in Northern India from one rural and one urban township. We also conducted 12 in-person and telephonic interviews with mothers and elder sisters. Following transcription, thematic analysis produced three emergent themes:

Routinization and Rejection: Women expect and accept most of the norms due to social and familial traditions. Social dynamics, specifically recent positive media portrayal of menstruation led participants to express a strong desire to change rules around menstruation and discuss how certain taboos such as not touching pickle jars are not realistic.

Explanations and Lack of Information: Participants reported minimal menstruation-related education when in high school, and that education was limited to learning about pad usage. Their education excluded causes of menstruation and other changes that occur along with menstruation. Geographic location (urban vs. rural) amplified participants' identification with taboos, but in both locations, participants expressed the need for increased education, particularly before menstruation, and the inclusion of boys in the educational sessions.

Expectations and Generational Change: All mothers reported that as young women, they used a cloth to manage menstruation but now encourage their daughters use pads rather than cloths. Further, they shared that they 'only' stopped them from entering religious areas because of culture. College-women participants expressed that they would like to provide their own children more information that extends beyond pad usage and behavioral rules.

Data revealed that participants retained agency in enabling as well as dismantling some taboos around menstruation. Most of these taboos exist due to traditions. Over the years restricting kitchen entry and use of cloth has declined because of modern nuclear families and access to affordable sanitary products. Similarly, increased access to scientific knowledge to both young men and women, and avenues for support at the systemic level can contribute to structural changes.

# Worry as a Mechanism to Motivate Information Seeking About Protective End-of-Life Communication Behaviors

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Making known one's end-of-life care (EOL) wishes via the processes of advance care planning (ACP) and advance directive (AD) completion is associated with a bevy of positive outcomes for patients. Such desirable outcomes include fewer ICU admissions, decreased rates of unnecessary intensive medical procedures, lower healthcare costs, greater patient-provider relationship satisfaction, increased quality of life, and more. Despite these benefits, fewer than 30% of patients in the United States engage in ACP or complete advance directives. These abysmally low numbers are most likely due to several causes, including low self-efficacy and subsequent low motivation to engage in the process. Several researchers have examined the persuasive power of using worry to motivate patients to engage in preventative health behaviors, such as cancer screening. This study sought to expand upon that body of literature by examining patient's motivation to seek information related to ACP and AD after being exposed to stimuli intended to arouse differing levels of worry regarding bad EOL outcomes. Participants (n = 480) were randomly assigned to either the high worry (n = 163), low worry (n = 159), or control group (n = 158) and asked to complete a questionnaire examining beliefs and information seeking intention regarding ACP and AD completion. Additionally, to control for participants' level of state worry, each participant completed the Penn State Worry Questionnaire, which was treated as a covariate in the final analysis. A repeated measures MANCOVA found a statistically significant increase for the worrying conditions on the participants' intention to seek information about ACP and ADs from time 1 to time 2. However, those in the control groups did not show a statistically significant increase from time 1 to time 2. Results of the experiment indicated worry was associated with greater motivation to engage in information seeking about ACP and AD. We believe this study contributes to the literature on worry as a persuasive mechanism to motivate patients to engage in important preventative health behaviors.

# "You Know You Are Getting Old When…": Improving Adherence to Mobile-Based Cognitive Assessments Using AI-Based Tailored Reminders

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Declines in cognitive and perceptual abilities are generally part of the normal aging process. This becomes worrisome when these changes become severe enough to limit one's ability to live independently and to do common everyday tasks. In the US, the early detection of cognitive declines is particularly critical with the rapidly increasing number of older adults and the increasing prevalence of age-related neurodegenerative dementias. In 2018, about 16% of Americans was 65 years or older [1]. This is projected to nearly double from 52 million in 2018 to 95 million by 2060. About 1 in 6 Americans 65 years and older have mild cognitive impairment. Moreover, the Alzheimer's Association [2] estimates that 5.7 million Americans suffer from dementia. Of these, 60-70% are thought to suffer from Alzheimer's disease. Alzheimer's and other dementias are recognized as a major source of disease burden in the US, costing an estimated $277 million in healthcare costs for adults >65 years [2].

While there is still no cure for dementia or Alzheimer's, current diagnosis relies on documenting mental decline, at which point it is usually too late to benefit from cognitive interventions. Early detection through regular neuropsychological tests can help individuals and their doctors identify interventions or lifestyle changes that may help with preserving cognitive functioning or identify potential risk factors that may lead to dementia. Fortunately, there are valid and reliable cognitive assessments that can be self-administered through mobile technology allowing for continuous remote monitoring of changes in cognition [3]. Since the sensitivity of these tests to detect major cognitive declines require periodic and regular assessment over time, long-term adherence is typically poor. We collected pilot data from older adults (N=120) engaged in home-based cognitive training over a 12-week period. By the end of the 12th week, only half of all participants engaged in the training.

The Adherence Promotion with Person-centered Technology (APPT) project aims to promote early detection and treatment of age-related cognitive decline through an artificial intelligence-based reminder system to help ensure long-term engagement with home-based cognitive assessments. Machine learning approaches will be used to predict patterns of adherence based on objective and subjective measures of adherence, technology proficiency, self-efficacy, behavioral intention to engage in training, attitudes toward cognitive training, and cognitive training history. This information will be used to create and schedule tailored reminders adapted to the daily routine of users and their context. The problem of understanding and promoting technology based-adherence requires a multi-disciplinary approach with a team that has extensive experience in cognitive training and assessment, older adult technology use, intervention design, tailored interventions, health data mining and analytics, aging and individual differences, and machine learning. This diverse knowledge base is crucial for the success of this multi-year NIH-funded project. This paper will describe progress on the development, pilot testing and refinement of the AI-based reminder system. This project is supported by NIA R01 AG064529.

# "You're not just the nurse": Informal Roles of Hospice Nurses and Their Effects on Compassion Fatigue

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Compassion fatigue is present in multiple nursing fields, but hospice poses a unique threat to nurses. Consistent proximity with patient suffering, death and dying, and constant communication with patients regarding their death culminate in an environment that is challenging to these nurses. Research has been conducted concerning the effects compassion fatigue can have on the quality of care received by the patient, but there has been very little research conducted analyzing the relationship between hospice nurse-patient communication and compassion fatigue. The aim of this study was to determine the many informal roles hospice nurses play as a result of working in such a distinctive field and how these roles impact the effects of compassion fatigue. 15 hospice nurses were interviewed regarding their experiences caring for patients using a semi-structured interview protocol. The results suggest hospice nurses occupy multiple informal roles for both the patients and the patients' families while still fulfilling their formal role as caregiver. Participants most frequently described serving as an advocate, a provider of physical and emotional comfort, and as an overall "death guide" for the patient. For families, participants most often served as a provider of emotional support and as a guide throughout the dying process. The perception that hospice nurses are solely responsible for fulfilling each of these informal roles exacerbates the effects of compassion fatigue felt by hospice nurses and can have negative impacts on the overall quality of care received by patients. Future research should focus on determining how hospice and other healthcare organizations can provide support to these nurses to mitigate the number of informal roles hospice nurses must fulfill in order to feel they are providing patients and families with what they need.

**Youth Social Media Use Patterns as Predictors of Vaping Experimentation and Pro-Vaping Beliefs**

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Introduction: From the persistent marketing of popular electronic cigarette brands, to videos of vaping tricks, there is a wealth of pro e-cig content on social media sites (Huang et al., 2019). These portrayals and promotions of electronic cigarette use in the media environment are contributing to a perception of descriptive norms, both at the population level, and within peer networks (Cho et al., 2019; Liu et al., 2019). This calls for concern among public health researchers due to the predominance of adolescents and young adults on popular social media platforms, and the proven relationship between routine exposure to health-related media content and future behavior (Hornik et al., 2013). Thus, separately examining combustible cigarette smokers and non-smokers, we sought to investigate the relationship between frequency and type of social media use, and the likelihood of vaping among adolescents. Additionally, we were interested in seeing whether pro-vaping beliefs mediated this relationship, and to what extent. Understanding these relationships can inform strategies for the development and deployment of media-based anti-vaping campaigns.

Method: A weekly rolling cross-sectional survey was administered to a nationally representative sample between 2014-2017 in order to understand their tobacco and e-cigarette-related behaviors and beliefs, as well as their media engagement patterns. Participants were 13 to 25-year-olds who were contacted by phone at two time points, N=11,847 at baseline, and N=4470 six months later at recontact. A variety of regression models were used to determine the associations between social media patterns at baseline and vaping behavior at recontact, cross-sectional baseline associations between pro-vaping beliefs and social media use, as well as pro-vaping beliefs at baseline and vaping behaviors at recontact. Age, race, and, for lagged models, prior vaping was controlled for in all models.

Results: Among non-smokers, greater baseline use of Facebook, Instagram, and Twitter was significantly associated with reporting ever vaping at recontact, adjusting for ever-vaping at baseline (OR = 1.06, p = .023; OR = 1.06, p = .022; OR = 1.05, p = .033). More frequent use of these three platforms was also significantly associated with believing that vaping was less harmful than smoking, and that e-cigs can be used as a smoking cessation tool. These baseline beliefs predicted vaping at recontact (OR = 2.09, p = .032). Tumblr and YouTube use were not significant predictors of vaping. There were no significant relationships between the media and belief or behavior variables for current smokers.

Conclusion: Non-smoking adolescents who are frequent users of popular social media sites are more likely to try vaping and have favorable vaping-related beliefs. Although our measures do not specifically assess participants' exposure to pro-vaping messages, it is highly plausible that more engagement with these social media sites increases the likelihood of coming across such content due to their prevalence on the sites. Routine exposure to these messages may increase vaping intentions, and ultimately, behavior. Health communication campaigns aiming to prevent uptake of vaping among non-cigarette smoking adolescents should target users of these platforms, as well as addressing these particular beliefs within the campaign messages.

**Creating an Interactive Video Game with Narrative Immersion to Educate College Freshmen about Mindful Drinking**

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Binge drinking is a major public health issue that primarily affects college campuses. Students at a U.S. public state college felt that the school's existing online alcohol education program for incoming freshmen was not engaging. "Fresh Start," an interactive narrative-based video game, was created to educate college freshmen about mindful drinking skills and better appeal to this population. Guided by health communication theories such as Social Cognitive Theory, Self Determination Theory, and Elaboration Likelihood Model, the game immerses players in realistic scenarios that college freshmen might come across in their first year of college. Throughout the game, players have the ability to exert control by making choices, allowing them to manipulate the content and form of the game. The game presents reinforcement health messages in response to the choices that players make, to foster feelings of competence and promote intrinsic motivation. The game also utilizes "mini-games" dispersed throughout the narrative for players to learn and test important skills, such as pouring a standard drink of different types of alcohol and finding effective ways of persuading a peer to stop drinking based on the peer's intoxication level. Playtest feedback shows that "Fresh Start" is engaging, enjoyable, relatable, authentic, and effective in promoting mindful drinking behavior. The game is also culturally sensitive, inclusive, and representative of the college student body. "Fresh Start" innovatively addresses the need to educate college freshmen about mindful drinking in an engaging way, and proves serious games as a viable and effective way of health intervention.

# Environmental Health Literacy: The intersection of environmental public health and health communication

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*Kathleen Gray, UNC Institute for the Environment, University of North Carolina at Chapel Hill*
*Maria Lapinski, Department of Communication and AgBio Research, College of Arts and Sciences,*
*Mónica Ramírez-Andreotta, University of ArizonaMichigan State University*
*Jennifer Liss Ohayon, Silent Spring Institute*
*Liam O'Fallon, National Institute of Environmental Health Sciences*

The concept of Environmental Health Literacy (EHL) has been evolving rapidly over the last five years. It is a relatively new subdiscipline that draws upon the robust and interdisciplinary foundations of risk communication, environmental health sciences, health literacy, and communication research. At its most fundamental level, EHL is the basic understanding that environmental exposures may have health consequences. In this session, attendees will learn about the importance and value of environmental health literacy in the context of health communication and what it means for environmental public health. Panelists will describe the ways in which they are working to promote the environmental health literacy of different audiences, as well as the strategies for measuring it. A moderator and six participants from seven different institutions will address topics that include: 1) the emergence of EHL and why it matters (O'Fallon, NIEHS), 2) exposure as it relates to water contamination (Hoover, University of Kentucky), 3) communication strategies to increase EHL as it relates to breast cancer and environmental risk factors (Silk, University of Delaware), 4) approaches to measuring EHL (Gray, University of North Carolina), 5) cultural tailoring of environmental health messages (Lapinski, Michigan State University) 6) the role that citizen science, data sharing, and art can play in achieving EHL (Ramirez-Andreotta, University of Arizona), and 7) the importance of, and tools for, reporting back personal exposure results in strengthening EHL (Ohayon, Silent Spring Institute). The panel will also discuss the challenges and opportunities for the future application and assessment of *EHL*.

# The Art and Science of Writing Successful Health Communication Grant Applications

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*Xiaoli Nan, University of Maryland*
*Jeff Niederdeppe, Cornell University*
*Janice Krieger, University of Florida*

The health communication field provides significant opportunities for winning small internal grants as well as large external grants from funders such as the National Institutes of Health (NIH). The grant process is very competitive, however, and to get funded one typically has to score very highly relative to other applications. Putting in a successful grant requires both art and science, including skills that are not taught in most communication programs. In the current panel, we bring together several health communication scholars who have repeatedly gotten funded, including R01 projects from NIH. The panel will discuss and share insights about several critical aspects of writing a successful grant application. This includes: 1) coming up with a "fundable" idea that fits the grant mechanism to which one is applying; 2) assembling a research team that can expertly and successfully carry out the work; 3) writing specific aims and the larger grant application in ways that are accessible and effective; and 4) revising the application based upon internal/external feedback and reviewer critiques. The panel will be chaired by Dr. Seth Noar and participants are Drs. Xiaoli Nan, Jeff Niederdeppe, and Janice Krieger. Panelists will share their experiences and advice in these areas and use examples from their recently funded health communication grants as exemplars. This panel will be of broad interest to both graduate students writing internal grant applications as well as faculty members writing larger external grant applications in health communication.