

USE OF SOCIAL MEDIA MESSAGING TO MOTIVATE STUDY ABROAD STUDENTS TO
ADOPT SAFE FOOD AND WATER PRECAUTIONS DURING TRAVEL

by

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(Under the Direction of Joel Lee)

ABSTRACT

This qualitative study was conducted to assess focus group data to generate information on the applicability of a social media video designed and developed for sensation seeker study abroad students preparing to travel using the Sensation Seeking Model and Extended Parallel Process Model. This study sought to determine potential adaptations to Instagram video storyboards that address the perceived severity and perceived susceptibility of travelers' diarrhea and the perceived efficacy of three proposed solutions for preventing travelers' diarrhea. With the rise of U.S. students studying abroad and with an increase in diversification of country study abroad programs, students are at an increased risk for travelers' diarrhea. Food and water safety messaging may help prevent travelers' diarrhea. However, limited research exists on travelers' diarrhea and the student's perspective on the health risks and prevention behaviors while studying abroad. This study involved conducting four focus groups with pre and post study abroad university students. It investigated persuasive message design strategies to influence study abroad students. Participants' sensation seeking traits, perceptions of travelers' diarrhea and perceptions of recommended responses to prevent travelers' diarrhea were assessed. Findings revealed the majority of the participants were high sensation seekers. Literature shows

that study abroad students score higher than college students on desires for unusual sensations or experiences (Schroth & McCormack, 2000). The discussions revealed that participants' perceived severity and susceptibility were serious and high. However, their perceived severity were dependent on personal choices made when abroad. Participants believed two solutions were effective at preventing travelers' diarrhea and felt confident in performing two solutions. The participants underscored the need for changes to the storyboards to achieve an effective design and targeted message that ultimately changes attitudes, behavioral intentions, and behavior of students. Recommendations for changes included areas such as personal experience, additional information and statistics, audio and captions, images, style, length, and trust. Designed and developed messaging for sensation seekers using the Sensation Seeking Model and Extended Parallel Process Model, via Instagram, holds promise as an effective communication strategy for reaching and influencing study abroad students to take food and water precautions for preventing travelers' diarrhea.

INDEX WORDS: Sensation seeking, Extended Parallel Process Model, study abroad, social media, health promotion messaging, travelers' diarrhea, food and water safety

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DEDICATION

This work is dedicated to my husband, Jimmy Bligh, and my son Andrew Bligh. Thank you for your patience and understanding as I powered through this dissertation and degree and spent many days and nights at the library. This life dream could not have been possible without you and your support.

This work is also dedicated to my parents. My mother, Patricia Davila, and father, Mike Davila, taught me to never give up on my dreams and to always keep pushing no matter what. To my sister, Nina Roldan, and brother, Jeremy Davila, thank you for your love and support to help me finish.

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CHAPTER 1

INTRODUCTION AND LITERATURE REVIEW

Studying abroad provides the opportunity to experience a new country and explore a new culture, a variety of food, and an unforgettable atmosphere. A student will be able to learn in a new education system, meet new friends, and enjoy activities that they may not have tried before in their home nation. Study abroad students return having gained an experience of a lifetime and memories they will keep forever. However, study abroad students are at risk for travel related illnesses or injuries. Some students fall ill during their time abroad or return home ill. Most frequently, students are diagnosed with gastrointestinal illness but more specifically, travelers' diarrhea. Travelers' diarrhea can be caused by the bacteria, *E. coli*, in food or water due to poor food and water precautions. The illness can be prevented if students follow three simple recommendations. This dissertation will explore the use of social media messaging to motivate study abroad students to adopt safe food and water precautions.

STUDY ABROAD TRAVEL

According to the Open Doors Report, a yearly report produced by the Institute of International Education and the U.S. Department of State's Bureau of Educational and Cultural Affairs, "study abroad by American students has more than tripled in the past two decades" from academic years, 1995-1996 to 2015-2016 (Institute of International Education, 2017). The Institute of International Education is a not-for-profit organization that supports international education and access to education worldwide (Institute of International Education, 2019b). Most recently, there has been a shift within U.S. universities to increase cultural awareness and foreign

language skills by encouraging students to study abroad (Goldstein & Kim, 2006; McMillan, 2012; Rhodes, DeRomana, & Pedone, 2018). During the 2016-2017 academic year, the number of U.S. students studying abroad increased by 2.3 percent from 325,339 students to 332,727 from the previous 2014-2015 academic year (NAFSA, 2018). This accounts for a little over 1.6% of all U.S. students enrolled in higher education institutions (NAFSA, 2018). A recent press release from the Institute of International Education noted that about one in ten U.S. students study abroad during their undergraduate career (Morris, 2018).

In the 2015-2016 academic year, the top five leading study abroad destinations were 1) United Kingdom, 2) Italy, 3) Spain, 4) France, and 5) Germany (Institute of International Education, 2017). Recent demographics show that most U.S. study abroad students are undergraduates, Caucasian, and female (Angelo et al., 2018). Over half of U.S. study abroad students (54%) study in Europe and about 23% of students were studying in resource-limited countries (Angelo et al., 2018; Institute of International Education, 2017). In the 2016-2017 academic school year, Europe (54.4%), Latin America and the Caribbean (15.5%), and Asia (11.6%) were the top host regions for study abroad students followed by Oceania, Sub-Saharan Africa, Middle East and North Africa, North America, and Antarctica (Institute of International Education, 2019a). Close to 37,000 (36,975) U.S. students reported traveling abroad for non-credit work, internships, volunteering, and research abroad during the 2016-2017 academic year (Institute of International Education, 2019a). Among the top destinations for non-credit education abroad were Nicaragua, Mexico, and the Dominican Republic (Institute of International Education, 2017).

Students who travel abroad may be at risk for travel-related illnesses or injuries. There is little research data on U.S. study abroad students acquiring infections while traveling

internationally. However, a recent study by Angelo et al. (2018) described travel related illnesses in U.S. students who returned from studying abroad. Not surprisingly, the authors found there is variation in travel related illness among various host countries. Sub-Saharan Africa was the most common exposure region for U.S. study abroad students with travel related illnesses at 26% (Angelo et al., 2018). The top five exposure to travel related illness countries included India (11%), Ecuador (7%), Ghana (6%), and China (6%) (Angelo et al., 2018). Most of the countries in which students who studied abroad had an illness, included low and middle income countries (LMICs) as defined by the World Bank (Angelo et al., 2018). One of the most common illnesses among LMICs was diarrhea illness and malaria (Angelo et al., 2018).

Evidence suggests that students put themselves at risk by failing to engage in travel health prevention behaviors (Hartjes, Baumann, & Henriques, 2009). Hartjes and colleagues found that 25% of U.S. study abroad students reported travel-related health problems even though they reported self-confidence in their ability to engage in preventative behaviors and received a pre-travel health consultation with a primary care provider (Hartjes et al., 2009). A few factors such as sleep deprivation, navigation of a new language, loneliness, and managing new relationships might also contribute to risky behavior while traveling (Angelo et al., 2018). Other health risks that students have reported are risky sexual behavior and excessive alcohol consumption. In a study by Angelin and colleagues (2015), they found that close to half of the students who were sexually active did not practice safe sex while abroad. Pedersen et al. (2010) found that study abroad students became heavy drinkers, doubled their alcohol consumption while abroad, and reported multiple alcohol-related negative consequences while abroad.

A study by Han, Balaban, and Marano (2010), found an association between risk-taking attitudes and risk behavior among youths traveling to nonindustrialized countries. The authors

used a sensation-seeking scale to assess the risk-taking behaviors. “Risk-taking attitudes and risk perceptions of travel-related illnesses and injuries can be indicators of the likelihood of engaging in risk behaviors and subsequently the likelihood of experiencing illness during or after travel” (Han et al., 2010).

There is evidence that student travelers traveling to resource-limited countries are at risk for infectious diseases. Angelo et al. (2018) used the GeoSentinel global surveillance system for their research. GeoSentinel tracks and monitors travel related illnesses reported by ill travelers who presented for care in clinic sites across the globe (Angelo et al., 2018). The participating sites collect information on international travelers such as demographics, trip details, country of exposure, and clinical diagnoses (Angelo et al., 2018). This study that documented illnesses specifically among U.S. resident student travelers after returning to the U.S. found that most of the diagnoses were categorized as gastrointestinal illnesses (Angelo et al., 2018). Within the gastrointestinal illness category, acute diarrhea was the most common illness at 43% (Angelo et al., 2018). The most common diagnosis of acute diarrhea was found in six top regions where students travelled abroad, 1) Sub-Saharan Africa, 2) South America, 3) Central America, 4) South Central Asia, 5) North-east Asia, and 6) South-east Asia (Angelo et al., 2018). Additionally, there were two major findings in the GeoSentinel analysis. The study showed that acute diarrhea affected 30-70% of travelers regardless of travel purpose (Angelo et al., 2018). Furthermore, the returned students most commonly complained about diarrhea even though 70% received pre-travel advice (Angelo et al., 2018). This study demonstrates the need for students to receive pre-travel advice to prevent gastrointestinal illness and other health risks while studying abroad.

Gastrointestinal illness such as travelers' diarrhea has the potential to impair study abroad experiences for students. It is one of the most common illnesses affecting individuals from developing countries traveling to a less developed country (Okhuysen, 2007). The most common destinations where travelers' diarrhea occurs is in Asia, except in Japan, as well as the Middle East, Africa, Mexico, and Central and South America. Typically *Escherichia coli*, *E. coli*, is one of the main pathogens that causes travelers' diarrhea (Okhuysen, 2007). Hill and Ryan (2008) define travelers' diarrhea as being at a minimum three loose to watery stools in a 24-hour period with or without one of more symptoms of abdominal cramps, fever, nausea, vomiting, or blood in the stool (Hill & Ryan, 2008).

Recently, at the beginning of 2019, the Food and Drug Administration approved an antibacterial drug, Aemcolo (rifamycin) (Healthline Media, 2019). This delayed release antibiotic tablet for the treatment of travelers' diarrhea caused by non-invasive strains of *E. coli* is delivered to the colon (Aries Pharmaceuticals Inc., 2018). These symptoms can be highly disruptive, discomforting for the traveler, and may lead to more serious health issues if left untreated. The drug is now available for use and a doctor may prescribe this drug for those who have consumed food or water contaminated with bacteria, viruses, or parasites. Compared to other anti-diarrheal medication such as Loperamide, Aemcolo antibiotic, can help get rid of the bacteria and reduce recovery time (Healthline Media, 2019).

According to the Centers for Disease Control and Prevention, contaminated food or drinks with bacteria or viruses in them can cause travelers' diarrhea and other diseases (Connor, 2018). Study abroad students traveling to developing countries are especially at risk. Many travelers are aware of the risk, but rarely take the necessary food and water safety precautions to avoid travelers' diarrhea (Okhuysen, 2007). A systematic review of the literature conducted by

Evans, examined non-pharmacotherapeutic interventions in travelers' diarrhea across the globe, specifically the impact of advice provided and the adherence by travelers (Evans, 2018). He found that non-clinical sources may provide advice to travelers, however, this is unregulated (Evans, 2018). The review also suggested that advice provided by clinical sources along with the amount of advice provided has no correlation with reducing travelers' diarrhea since there are changes that occur among travelers regarding their behaviors towards the advice provided (Evans, 2018). Travelers' attitudes and practices tended to deviate away from the advice the traveler would receive and this might have been one reason for having travelers' diarrhea (Evans, 2018).

In summary, with the rise of U.S. students studying abroad and with an increase in diversification of country study abroad programs, students are at an increased risk for travel related illnesses. Also, students tend to put themselves at risk by failing to perform travel health prevention behaviors. Risk-taking attitudes and risk perceptions of travel related illnesses can be indicators of students engaging in risky behaviors while studying abroad (Han et al., 2010). This demonstrates the need to inform students who travel abroad for educational or non-credit educational study about travel related illnesses and injuries. Students can reduce their risk by having safe eating and drinking habits (Connor, 2018). Food and water safety messaging may help prevent travel-related illness, such as travelers' diarrhea. However, there is a limited amount of research on travelers' diarrhea and the student's perspective on the health risks and prevention behaviors while studying abroad. The lack of information makes it difficult to tailor information to the unique needs of the study abroad student who is a sensation seeker. This study will dive deeper into the unique risk profiles of study abroad students and will explore the characteristics of study abroad students and students interested in studying abroad to see how they relate to their

risk taking attitudes and risk perceptions of travelers' diarrhea using the sensation seeking model and Extended Parallel Process Model (EPPM). Understanding the risk profiles will be useful for creating tailored food and water safety messages to prevent travelers' diarrhea.

SENSATION SEEKING MODEL

Sensation seeking, as defined by Zuckerman (1994), is the desire for “varied, novel, complex, and intense sensations and experiences, and the willingness to take physical, social, legal, and financial risks for the sake of such experiences.” Studies have found behavioral expressions of sensation seeking in a person's risky behavior involving their reckless driving, sexual health, alcohol and drug use, and gambling (Heino, Van Der Molen, & Wilde, 1996; R. H. Hoyle, Fejfar, & Miller, 2000; Newcomb & McGee, 1991; Stacy, Newcomb, & Bentler, 1993; Zuckerman, 1994). This sensation seeking characteristic is also found in vocational preferences and choices for premarital and marital relationships as well as a person's eating habits and food preferences (Zuckerman, 1994). Arnett (1994) and Horvath and Zuckerman (1993) found that high sensation seekers are more likely to perform risky behaviors and later less likely to label them risky behaviors than low sensation seekers. These studies show that high sensation seekers are more likely to try and repeat risky behaviors than low sensation seekers.

The sensation seeking personality trait can be measured using an eight-item brief sensation-seeking scale (R. Hoyle, Stephenson, Palmgreen, Lorch, & Donohew, 2002). The scale has four subscales: 1) Thrill and Adventure Seeking, which measures desire for danger or speed of activity, 2) Experience Seeking, which measures desire for unusual experiences, 3) Disinhibition, which measures desire for social or sexual experiences like partying and different sex partners, and 4) Boredom Susceptibility, which measures desire for variety of activities

(Schroth & McCormack, 2000). For the purposes of this study, the scale will be referenced as an “Interest and Preference” Survey (R. Hoyle et al., 2002).

Literature shows that study abroad students score higher than college students on desires for unusual sensations or experiences (Schroth & McCormack, 2000). A study by Schroth and McCormack (2000) explored the associations between the sensation seeking personality trait and study abroad students. When comparing study abroad men and women from a sample of alumni from 14 countries in the California State University’s International Program (Schroth & McCormack, 2000) to a previous sample of traditional college students from a study by Zuckerman et al. (1991), study abroad men had higher scores in the Experience Seeking category and lower scores in the Thrill and Adventure Seeking, Disinhibition, and Boredom Susceptibility categories (Schroth & McCormack, 2000). Study abroad women had higher scores on the Experience Seeking and the college women had higher scores for the Thrill and Adventure Seeking and Disinhibition categories (Schroth & McCormack, 2000). The low scores in the subscales for study abroad students did not match up consistently with the characteristics of a sensation seeker as defined by Zuckerman. The high scores in Experience Seeking demonstrated that the student’s personalities were more in line with the desires of new experiences of the mind and senses when traveling abroad rather than desires for dangerous activities and parties (Schroth & McCormack, 2000).

A study by Pedersen et al. (2014) examined predeparture factors associated with drinking and alcohol-related consequences for students studying abroad. The researchers found that several sensation seeking factors predicted drinking alcohol (disinhibition) or alcohol-related consequences (thrill and adventure seeking) (Pedersen et al., 2014). However, other sensation seeking factors such as experience seeking and boredom susceptibility did not have any

association with drinking and alcohol-related consequences (Pedersen et al., 2014). These studies help to better understand who may be at risk abroad, and they also demonstrate that studying abroad most likely attracts students who have common sensation seeking personality traits of desires to explore new places (experience seeking) and desires for variability of activities (boredom susceptibility).

To reach sensation seekers, Edgar and Volkman recommend using a media strategy called SENTAR (SENSation seeking TARgeting) that allows for messages with high sensation value for high attention seekers (Edgar & Volkman, 2012). Reaching this particular audience requires communication messaging that has the following characteristics: “(a) novel, creative, or unusual; (b) complex; (c) intense stimuli that are emotionally powerful or physically arousing; (d) graphic or explicit; (e) somewhat ambiguous; (f) unconventional; (g) fast paced; and (h) suspenseful” (Noar, Palmgreen, Zimmerman, Lustria, & Lu, 2010). In an article by Noar and colleagues, they assessed the relationship between perceived message sensation value (PMSV) and perceived message effectiveness (PME) of PSA messages that used the SENTAR approach. PMSV is described by how much an individual perceives a message with high sensation value attributes to be (Noar et al., 2010). They found that PMSV and personal utility were both strong predictors for PME (Noar et al., 2010). Similar studies have found that messages perceived to have a high sensational value are more appealing and effective with high sensation seekers (Donohew, Lorch, & Palmgreen, 1998; Palmgreen & Donohew, 2006). Harrington and colleagues suggest “if a message meets an individual’s level of need for stimulation then attention will occur but if the message exceeds or fails to meet that level, then attention does not occur” (Harrington et al., 2003). High sensation value messages should be “novel, intense, emotionally arousing, graphic, explicit, fast-paced, and suspenseful” using “driving music, quick

edits, and unusual camera angles.” Low sensation value messages should be “common, expected, slow-paced, and nonarousing” using “calm music, few edits, and standard camera angles” (Harrington et al., 2003). Another study explored high and low sensation seekers and the association to high and low sensation value antidrug public service announcements. Donohew, Palmgreen, and colleagues found that high sensation value messages had more of an effect on high sensation seekers and low sensation value messaging had an effect with low sensation seekers while Zuckerman and colleagues found that high sensation value messages reached both high and low sensation seekers (Harrington et al., 2003).

In summary, sensation seeking is based on the desire for “varied, novel, complex, and intense sensations and experiences, and the willingness to take physical, social, legal, and financial risks for the sake of such experiences” (Zuckerman, 1994). To reach sensation seekers, Edgar and Volkman recommend using a media strategy called SENTAR (SENsation seeking TARgeting) that allows for messages with high sensation value for high attention seekers (Edgar & Volkman, 2012). Reaching this particular audience requires communication messaging that has the following characteristics: “(a) novel, creative, or unusual; (b) complex; (c) intense stimuli that are emotionally powerful or physically arousing; (d) graphic or explicit; (e) somewhat ambiguous; (f) unconventional; (g) fast paced; and (h) suspenseful” (Noar et al., 2010). Campaigns targeting high sensation seekers using the SENTAR approach have been successful in behavioral changes in the areas of sexual behavior and HIV prevention (Noar, 2006; Palmgreen, Noar, & Zimmerman, 2008; Zimmerman et al., 2007). There have also been successful studies exploring the effectiveness of designing and targeting messages using message sensation value (Harrington et al., 2003). Targeted messages based on an individual’s sensation

seeking needs should result in changes in attitudes, behavioral intentions, and behavior (Donohew, Palmgreen, & Lorch, 1994).

EXTENDED PARALLEL PROCESS MODEL

Several risk related behavior prevention studies have successfully advanced the science of message design and effects for health campaign messages using an array of theoretical principles (Palmgreen, Donohew, Lorch, Hoyle, & Stephenson, 2001; Vaughan & Rogers, 2000).

The Extended Parallel Process Model (EPPM) can be applied to effectively create and deliver a risk and efficacy behavior change message strategy. This model by Witte is a message design theory that can be used as guidance for creating messages related to fear appeals (Witte, 1992). It has been used in health promotion campaigns largely with the anti-tobacco messaging (Gould, Watt, McEwen, Cadet-James, & Clough, 2014). EPPM is also known as Threat Management or Fear Management (Health Communication Capacity Collaborative, 2014). This model demonstrates how efficacy beliefs and fears of a health threat influence behavior decisions. According to the Health Communication Capacity Collaborative, “the degree to which a person feels threatened by a health issue determines his or her motivation to act, while one’s confidence to effectively reduce or prevent the threat determines the action itself” (Health Communication Capacity Collaborative, 2014). Individuals have to believe they are susceptible to the threat. Four distinct variables of the EPPM are related to efficacy and threat beliefs. The EPPM measures the threat variables of perceived severity and perceived susceptibility (Health Communication Capacity Collaborative, 2014). According to Witte, perceived severity is based an individual’s belief about how serious the threat is and perceived susceptibility is an individual’s belief about their chances of experiencing the threat (Witte, 1992). Efficacy beliefs are measured by an individual’s response efficacy and self-efficacy. Response efficacy refers to

“the effectiveness of the recommended response,” and self-efficacy refers to an individual’s “ability to perform the recommended response” (Witte, 1992). Individuals can be classified by having high or low levels of perceived efficacy and high or low levels of perceived threat, see Table 1 Witte explains, perceived threat determines the degree or intensity of the response or reaction to the message, while perceived efficacy determines the nature of the reaction or response (Witte, 1992).

Table 1. Questions to measure threat and efficacy beliefs

Threat Variables	
• Perceived Severity	How serious are the consequences if you became ill or infected with [threat]?
• Perceived Susceptibility	How likely is it that you might get [threat]?
Efficacy Variables	
• Response Efficacy	How effective is a proposed solution, such as [example of solution], at preventing [threat]?
• Self-Efficacy	How confident are you that you could successfully practice the proposed solution?

Depending on the level of efficacy and perceived threat, individuals can be divided into four audience segments. Table 2 demonstrates how different levels within each audience segment correspond to different health message strategies that can be used to increase an individual’s threat perceptions or efficacy beliefs (Health Communication Capacity Collaborative, 2014). “Communication campaigns using the EPPM framework can help audiences develop realistic risk perceptions and provide realistic and actionable information about how to reduce risk” (Health Communication Capacity Collaborative, 2014).

Table 2. EPPM audience segments and strategies

	High Efficacy <i>Belief in effectiveness of solutions and confidence to practice them</i>	Low Efficacy <i>Doubts about effectiveness of solutions and about one's ability to practice them</i>
High Threat <i>Belief that the threat is harmful and that one is at-risk</i>	Danger Control People take protective action to avoid or reduce the threat. Strategy: Provide calls to action	Fear Control People are too afraid to act, just try to reduce their fear and feel better. Strategy: Educate about solutions
Low Threat <i>Belief that the threat is trivial and that one is not at-risk</i>	Lesser Amount of Danger Control People know what to do but are not really motivated to do much. Strategy: Educate about risk	No Response People don't feel at risk and don't know what to do about it anyway. Strategy: Educate about risk and about solutions

According to Witte, when an individual perceives a serious threat, they become scared, and will reduce their fear by controlling the danger or the fear. An individual may respond through “danger control” actions where they control the danger from the threat by changing their behavior to avoid the threat. This outcome is defined as “message acceptance,” and an individual will have an attitude, intention, or behavior change in response to the message received (Witte, 1992). Individuals having a high threat response, where they know they are at risk for the threat, and high efficacy of being able to perform the recommended responses to prevent the threat, will typically have a danger control response, meaning they will adopt messages and change their behavior intentions (Witte, Cameron, McKeon, & Berkowitz, 1996).

The individual could also feel fearful and respond by controlling their fear through “denial, discounting, or reactance against the threat” also known as fear control (Gould et al., 2014). Instead of “message acceptance,” an individual will have “defensive avoidance or reactance” (Witte, 1992). “Defensive avoidance” is a resistance to the message received. An individual can be motivated to deny or minimize the threat (Witte, 1992). This defensive

avoidance or reactance will cause an individual to be “inattentive to the communication (e.g., looking away from the message),” or an individual can “suppress any thoughts about the threat over the long term” (Witte, 1992). Reactance happens when an individual feels their perceived freedom is reduced and they feel like the “communicator is trying to make him or her change” (Witte, 1992). For example, they may say “I’ll show them that they can’t manipulate me, I’m going to smoke even more!” (Witte, 1992). Sometimes an individual may have a low threat or feel no threat. In this instance, they may have a low response or no response to the message. Levels of perceived efficacy will also help to segment the audience into danger control or fear control segments.

Individuals with a fear control response, typically believe they are at risk for the threat (high perceived threat), but believe they won’t be able to do the recommended responses or they think the recommended responses are ineffective (i.e. low perceived efficacy) (Witte, McKeon, Cameron, & Berkowitz, 1995). Those who score low on response efficacy and have low self-efficacy, will control fear by defensively avoiding the issue or denying they are at risk for the threat (Witte et al., 1996; Witte et al., 1995). Witte suggests that those who fall in the fear control response will need help to increase their self-efficacy instead of making them more fearful (Gould et al., 2014).

In summary, the Extended Parallel Process model by Witte provides guidance on creating messages on fear appeals. To apply this model, people have to believe they are susceptible to a threat. In other words, they have to believe that they will get travelers’ diarrhea. The model classifies individuals by having high or low levels of perceived efficacy and high or low levels of perceived threat. Individuals can be divided into four audience segments depending on the level

of efficacy and perceived threat. This model will help to determine the appropriate health message strategy to reach each audience segment.

SOCIAL MEDIA

Social media is defined as being “Internet-based channels that allow users to opportunistically interact and selectively self-present, either in real-time or asynchronously, with both broad and narrow audiences who derive value from user-generated content and the perception of interaction with others” (Carr & Hayes, 2015). Social media can include online communications tools also known as social networking sites. These social networking sites include Instagram, Facebook, Snapchat, and Twitter.

Young adults use social media the most compared to all other age groups, where 88% of 18-29 year olds are using social media (Smith & Anderson, 2018). Facebook is the primary social media platform for Americans and about two thirds report that they are active Facebook users (Smith & Anderson, 2018). Pew Research found that Americans continue to use both Facebook and YouTube, but there is a growing trend of young adults using Snapchat and Instagram (Smith & Anderson, 2018). When examining age related differences of young adults, 18 to 24 year olds are more likely to use social media platforms such as Snapchat, Instagram, and Twitter than compared to 25 to 29 year olds (Smith & Anderson, 2018). About 71% of young adults 18 to 24 years old are using Instagram whereas about half (45%) are using Twitter (Smith & Anderson, 2018). Generally, about 60% of Instagram users are daily visitors (Smith & Anderson, 2018). However, there are about 81% of 18-24 year olds who use Instagram daily and 55% who use Instagram multiple times a day (Smith & Anderson, 2018).

Instagram, a photo-sharing social media platform, has over 1 billion active monthly users (Tillman, 2018). Overall, about 35% of Americans are using Instagram (Smith & Anderson,

2018). According to the Instagram Sports Summit that took place on November 7, 2018, Instagram is aiming to bring you closer to the people and the things you love (Instagram, 2018). More and more videos are being uploaded to Instagram every day. Currently, 80 million videos were upload to Instagram per day in 2018 and about 400 million people have uploaded a video to a feed or story in 2018 (Instagram, 2018). This year Instagram's top three areas of focus were Instagram stories, with 400 million using stories every day, IG Live, and IGTV. Instagram Stories is a feature in the app that lets you share multiple photos and videos that tie together to display in a slideshow format that is only available to your followers for 24 hours (Tillman, 2018). Instagram recommends to use five to seven posts to tell one narrative in the "Stories" feature (Instagram, 2018). Instagram reported that younger audiences use more sound on when viewing videos and are also seeing higher engagement when videos are posted in Stories (Instagram, 2018).

As more and more people are using social media, they are also consuming a wide variety of content, including news and health information. A Pew Research Center survey showed that 67% of Americans are receiving some of their news from social media such as Facebook and Twitter (Shearer & Gottfried, 2017). Recent studies have shown that there is a substantial amount of misinformation on these types of social networking sites which makes it concerning as more people are using these various platforms to share and spread misinformation and incorrect content (Sharma, Yadav, Yadav, & Ferdinand, 2017). It is important for credible organizations and public health institutions to post timely and accurate public health information on social networking sites. Sharing credible information from trusted sources will help lessen the amount of misinformation on social media.

Social media can be used to reach study abroad students with targeted risk behavior messaging. Social media can have an effect on persuasive outcomes and can be used for health promotion purposes. This particular communication channel provides customizable platforms for the delivery of tailored messages that meet the needs of different audiences. Some health condition topics may be easier to talk about on social media than others. A recent study by Hale, Pathipati, Zan, and Jethwani (2014) explored how specific health conditions are represented on Facebook Pages and how users engage with these specific conditions online. The most common type of pages were marketing/promotion type pages, followed by information/awareness, Wikipedia-type pages, patient support, and general support pages (Hale et al., 2014). Diarrhea was one of the six health conditions that was not represented in any support type Facebook page (Hale et al., 2014). They also found that conditions such as breast cancer and diabetes were the most common conditions with highest number of relevant pages on Facebook compared to stroke, HIV, spine, human papillomavirus, and diarrhea, which had the lowest number of pages (Hale et al., 2014). Based on the authors' findings, they suggest that future interventions on social media need to take into account stigma associated with specific health conditions and how stigma can limit social media engagement among Facebook users (Hale et al., 2014).

Social media is a powerful and impactful tool that has an expansive reach and interactivity that allow users to tailor their consumed content (Korda & Itani, 2013). Social media can deliver health promotion messaging to a wide variety of audiences in a cost effective way, and studies have shown that it can enhance health promotion and behavior change (Korda & Itani, 2013). Using health promotion and health behavior theories to support message creation and delivery provides the opportunity for social media managers to create content that encourages users to engage and change their health behavior.

A recent study by Eysenbach et al. (2017) explored the feasibility of designing, implementing, and evaluating a skin cancer prevention intervention using social media. Results of their mass communication Twitter campaign showed that the social media messages might have contributed to improved knowledge and attitudes of skin cancer during their outreach (Eysenbach et al., 2017). There is ongoing research on using social media to enhance health promotion although studies are limited. Eysenbach et al. (2017) suggests that more research is needed to determine how to raise awareness through social media and trigger behavior change.

In an article by Laranjo et al. (2014), the authors performed a systematic review and meta-analysis to evaluate the use and effectiveness of interventions using social networking sites to ultimately change health behaviors. This was the first ever meta-analysis conducted that evaluated the effectiveness of social networking site interventions changing health behaviors (Laranjo et al., 2014). They found that these types of social media interventions had a positive effect in promoting health behavior change (Laranjo et al., 2014). Because social media is widely accessible across geographical barriers and is increasingly being used daily, it serves as an “interesting loci for public health interventions in the behavioral domain” (Laranjo et al., 2014).

With social media’s expansive and customizable reach, it is a great communication tool that can be used to reach young adults studying abroad. With the rise of Instagram videos being shared, this platform can spread credible public health information quickly and engage users with interest in a variety of health topics. Social media can also be used to enhance health promotion strategies and holds promise for effective behavior change.

HYPOTHESIS

Using the Sensation Seeking Model and Extended Parallel Process Model, the primary purpose of this qualitative study was to assess focus group data to generate information on the

applicability of a social media video designed and developed for sensation seeker study abroad students preparing to travel. In addition, this study sought to determine potential adaptations to the storyboards that may be necessary to address the perceived severity and perceived susceptibility of travelers' diarrhea and the perceived efficacy of three proposed solutions for preventing travelers' diarrhea.

This paper explored risk profiles of study abroad students including their risk-taking attitudes and risk perceptions. The risk profiles sought to determine who is most at risk for travelers' diarrhea. The profiles helped to determine the appropriate messaging and the delivery of the message to use on social media. The specific aim of this qualitative study was to understand what design and content attributes pre and post travel study abroad students perceive as key to maximize the reach of the message and increase their intent towards adoption of food and water safety precautions.

CHAPTER 2

METHODOLOGY

DESIGN

This qualitative study involved conducting four focus groups with student participants who had recently studied abroad or who were interested in studying abroad. The study investigated persuasive message design strategies to influence study abroad students. The researcher assessed participants' sensation seeking traits, perceptions of travelers' diarrhea and perceptions of recommended responses to prevent travelers' diarrhea. The researcher chose to use focus groups as formative research since participants with common experiences or mutual interests in studying abroad can offer in-depth perspectives on risk-taking attitudes, risk perceptions, and behavioral intentions. The researcher's intent was to provide a sample of participants representing University of Georgia (UGA) students who were interested in studying abroad or who had recently studied abroad. The goal of the focus groups was to collect information and general perspectives of students as a means to ensure appropriate messaging and the delivery of the message are effective for social media. The researcher used rapid content analysis to explore the focus group dynamics and interpret the meaning of each topic in the transcribed focus group sessions. The study, Protocol ID#STUDY00006876, received UGA IRB approval on January 10, 2019 (Appendix A).

SAMPLE AND RECRUITMENT

The sample included 32 participants who were English speaking, 18 to 24 year old students who were interested in studying abroad (pre-travel) or had completed a study abroad

experience within the past two years (post-travel). Participants represented a convenience sample identified through the University of Georgia (UGA) Office of Global Engagement and through the UGA Study Away Fair. Convenience sampling is a non-probability sampling method where participants are chosen because they are conveniently available to participate in the study (Explorable.com, 2009). An agreement was made between the researcher and UGA's Office of Global Engagement to recruit participants from the UGA Office of Global Engagement's Students Interested in Study Abroad listserv and the Study Away portal. The researcher recruited prospective participants through email and in-person at the fair until more than eight to ten people had agreed to participate in each of the four focus groups. A recruitment flyer was passed out at the UGA Study Away Fair to encourage participants to sign up for a focus group (Appendix G). Students who participated in the focus groups received a \$10.00 cash incentive and pizza while participating.

A Qualtrics survey was developed as a screening tool to identify and recruit participants who met the inclusion criteria for the study (Qualtrics, 2019). This Qualtrics survey link was included in the recruitment email and listed on the recruitment flyer. Two surveys were created (Appendix H and I). The first survey was the screening tool used to capture eligible participants, while the second survey asked participants for their email address. The participants' email addresses were used to schedule the focus group sessions.

Two focus groups (PreTravel A focus group and PreTravel B focus group) had students who classified themselves as being interested in studying abroad and another two focus groups (PostTravel A and PostTravel B) had recently returned from studying abroad. Two focus groups were held in a private conference room at the UGA Office of Global Engagement office location and another two focus groups were held on UGA's main campus at the Miller Center in a

classroom. At the beginning of each focus group session, participants signed an informed consent form (Appendix F). The researcher anticipated a no-show rate and recruited more than the desired number of eight to ten participants for each focus group, which is based on the focus group recruitment recommendations from the literature (Bender & Ewbank, 1994; Morgan, 1988).

INSTRUMENT

The focus group discussion guides (Appendix B, C, and D) and a brief focus group survey (Appendix E) were developed based on the review of the literature for the Extended Parallel Process Model, eight-item brief sensation-seeking scale, as well as CDC's Health Message Testing System Question Bank (Centers for Disease Control and Prevention, 2011). Open-ended questions were developed for the focus group discussion guide to elicit opinions and perspectives on the topics. The focus group discussion guide generated students' point of views on the following topics: awareness and knowledge about travelers health, perceived risk (EPPM), preparation for travelers' diarrhea, perceived efficacy (EPPM), modalities for health education, and message testing.

A trained moderator facilitated the focus group sessions. Each session started with an icebreaker and was divided into a two part discussion. The first part of the session began with a discussion on the participants' awareness and knowledge about traveling abroad and healthy travel preparation. Next, the participants were asked questions about the factors in the Extended Parallel Process Model; perceived severity, perceived susceptibility, response efficacy, and self-efficacy focusing on travelers' diarrhea as the threat and three CDC prevention messages as the recommended responses to prevent travelers' diarrhea. Additionally, the moderator probed participants on preferred modalities of health education. The moderator also facilitated a second

part of the discussion on the participants' perspectives on three message storyboards that would potentially be created as one or two videos on Instagram. The moderator asked students to comment on and critique each storyboard based on images, phrases, ease of understanding material, appeal factors, and important takeaways. The discussion of the storyboards examined the use of the SENTAR strategy and the attitudes and behavioral intentions among sensation seekers. The video storyboards were designed to be a high sensation seeking storyboards to persuade and engage high sensation seekers.

PROCEDURES

The focus group sessions gained insights on the target audience, key messages, and overall strategies to engage interested study abroad students through social media. Before the actual focus group discussion portion began, the participants answered a brief focus group survey on demographics, social media use, and sensation seeking characteristics (Appendix B and C). During the focus group session, the students commented on storyboards with Centers for Disease Control and Prevention's (CDC) food and water safety messages to prevent travelers' diarrhea (Centers for Disease Control and Prevention, 2017). The messages focused on the student's attitudes and behavioral intentions. Three different messages were shown to the students to determine which message would be more persuasive. The messages were food and water safety tips that the student traveler could perform while abroad to prevent travelers' diarrhea. Each focus group was conducted in a private room and was audio recorded. The recordings were transcribed verbatim. There was one facilitator who led the discussion and two note takers who listened and took notes during the sessions. The notes captured observations and were used to describe the context of the discussion. Each focus group lasted between 60 to 80 minutes.

DATA ANALYSIS

The researcher used Dedoose (www.dedoose.com), a qualitative and mixed methods data analysis software, to examine focus group themes on the participants' perspectives on travelers' diarrhea and prevention messaging strategies. The brief focus group survey analysis that was descriptive was performed using Microsoft Excel.

The researcher read the transcripts multiple times and organized focus group themes into codes. This helped to identify and analyze patterns in the data. Each focus group session examined the Extended Parallel Process Model to find real threats with the desired intervention and provided awareness in the resolution. The researcher identified the risk profiles of each study abroad student and found similarities between the students. A rapid content analysis was performed to inform the health promotion social media message development and more specifically the creation of a social media video. The thematic analysis evaluated if a SENTAR video message was an effective way to persuade an individual to reduce their food and water risks when studying abroad.

MEASURES

Demographics

Participants for the focus groups reported their gender, race, ethnicity, and age.

Country and Region

The countries they plan to visit or the host countries of the students were organized by region according to the Institute of International Education (2019a).

Sensation Seeking Trait

An eight-item brief sensation-seeking scale by Hoyle, Stephenson, Palmgreen, Lorch, and Donohew (2002) measured the sensation seeking trait. The questions were as follows, 1) "I

would like to explore strange places,” 2) “I get restless when I spend too much time at home.” 3) “I like to do frightening things,” 4) “I like wild parties,” 5) “I would like to take off on a trip with no pre-planned routes or timetables,” 6) “I prefer friends who are excitingly unpredictable,” 7) “I would like to try bungee jumping,” 8) I would love to have new and exciting experiences, even if they are illegal,” see Table 3 (R. Hoyle et al., 2002). For each response, the respondent selected one of five items, “strongly disagree,” “disagree,” “neither disagree nor agree,” “agree,” and “strongly agree.” To measure high and low sensation seekers, a total score was taken from the summation of the eight items in the scale. Participants were included in the analysis if they completed all of the items in the 8-item Sensation Seeking Scale.

Table 3. Brief Sensation Seeking Scale

Brief Sensation Seeking Scale	
1	I would like to explore strange places.
2	I get restless when I spend too much time at home.
3	I like to do frightening things.
4	I like wild parties.
5	I would like to take off on a trip with no pre-planned routes or timetables.
6	I prefer friends who are excitingly unpredictable.
7	I would like to try bungee jumping.
8	I would love to have new and exciting experiences, even if they are illegal.

Extended Parallel Process Model

The Extended Parallel Process Model by Witte (1992) was used in the focus group discussion to measure the four factors in the model; perceived severity, perceived susceptibility, response efficacy, and self-efficacy. The focus group discussion explored participants’ perceptions of risk for travelers’ diarrhea and levels of efficacy for possible solutions to prevent travelers’ diarrhea.

The factors in the model were based on the perceived threat of travelers' diarrhea and its associated symptoms and the perceived efficacy of the effectiveness and feasibility of the CDC messages to prevent travelers' diarrhea. These messages were as follows: #1) Eat only food that has been fully cooked and served hot. #2) Do not eat fresh vegetables or fruits unless you can peel them yourself. #3) Drink only bottled, sealed beverages, and avoid ice—it was likely made with tap water.

The “perceived susceptibility to threat” factor were coded using a high and low scale and the researcher examined the participant's perception of their likelihood of getting travelers' diarrhea while studying abroad as noted in Table 2. The “perceived severity of threat” measured the participant's perception of the seriousness of travelers' diarrhea on the same high and low scale. Both the “response efficacy” and “self-efficacy” factors were coded and measured on a high and low scale similarly to the perception of threat. The response efficacy factor examined the perceived effectiveness of the CDC messages to prevent travelers' diarrhea and the self-efficacy factor measured the participant's perceived ability to do the messages while they studied abroad or when they planned to study abroad.

CHAPTER 3

RESULTS

DEMOGRAPHICS OF PARTICIPANTS

In the four focus groups, a total of 24 females and eight males participated. Each focus group had no less than 5 participants and no more than 11 participants; Focus Group #1, PreA (7 participants), Focus Group #2, PostA (11 participants), Focus Group #3, PreB (9 participants), and Focus Group #4, PostB (5 participants). Their mean age was 19 years old. The mean age of focus group #1, PreA, was 20 years old and focus group #3, PreB was 18 years old. Focus group #2, PostA, participants had a mean age of 20 years old, while the mean age of focus group #4, PostB, was 21 years old, respectively. The majority of participants identified as white, and all other participants identified as black or African American (4), Asian (8), or other (1). Only one participant identified as being Hispanic when asked about ethnicity (see Table 4).

Table 4. Demographic characteristics of participants

Demographic Characteristics of Participants		
Characteristics	N	%
Sex		
Male	8	25.0
Female	24	75.0
Age		
18 yrs old	4	12.5
19 yrs old	8	25.0
20 yrs old	8	25.0
21 yrs old	9	28.1
22 yrs old	3	9.4
Race		
White	17	53.1
Black or African American	4	12.5
Asian	8	25.0
Native Hawaiian or other Pacific Islander	0	0
American Indian or Alaska Native	0	0
Other	2	6.3
Missing	1	3.1
Hispanic or Latino		
Yes	1	3.1
No	10	31.3
Don't know/Not sure	20	62.5
Missing	1	3.1

Among the participants, 87.5% considered themselves active social media users and 65.6% reported using Instagram as the platform they use the most. Participants reported that their platform they engage with daily (like, share, retweet, repost, comment) was Instagram at 87.5% while Snapchat was the second highest at 71.9%. When asked to select one or more platforms used, participants selected Instagram (93.8%), YouTube (87.5%), and Snapchat (81.3%) (see Table 5.)

Table 5. Social media use characteristics of participants

Social Media Use Characteristics of Participants		
Characteristics	N	%
Active Social Media User		
Yes	28	87.5
No	3	9.4
Missing	1	3.1
Platform you use		
Blogs	3	9.4
Facebook	25	78.1
Instagram	30	93.8
Pinterest	16	50.0
Snapchat	26	81.3
Twitter	18	56.3
YouTube	28	87.5
Platform you engage with daily		
Blogs	0	0.0
Facebook	16	50.0
Instagram	28	87.5
Pinterest	5	15.6
Snapchat	23	71.9
Twitter	11	34.4
YouTube	12	37.5
Platform you use the most		
Blogs	0	0.0
Facebook	7	21.9
Instagram	21	65.6
Pinterest	1	3.1
Snapchat	8	25.0
Twitter	7	21.9
YouTube	2	6.3

Among the participants, 28 (87.5%) were characterized as being high sensation seekers and 4 (12.5%) were low sensation seekers (see Table 6). A low sensation seeker was identified as having a score between 8 to 23 and a high sensation seeker had a score of 24 to 40. There were two male and two female low sensation seekers. Only one female low sensation seeker went abroad while the rest were interested in going abroad.

Table 6. Sensation seeking characteristics of participants

Sensation Seeking Characteristics of Participants		
Characteristics	N	%
High sensation seeker	28	87.5
Low sensation seeker	4	12.5

Many students (59.4%) had a desire to visit or visited Europe for their study abroad experience and some students reported wanting to visit or visited multiple regions (see Table 7). The distribution of the focus group participants' desired or attended host regions was similar to the overall distribution among study abroad students in the 2016/2017 academic school year. The Institute of International Education showed that 54.4% of students who traveled abroad went to Europe while 59.4% of students from the focus group discussions went or would like to go to Europe (2019a). Similarly, 12.5% of focus group participants wanted to go or went to Latin America and 15.5% of students studied in Latin America and the Caribbean in 2016/2017 (Institute of International Education, 2019a).

Table 7. Desired or attended host regions of participants

Desired or Attended Host Regions of Participants		
Region	N	%
Europe	19	59.4
Latin America & Caribbean	4	12.5
Asia	3	9.4
Oceania	0	0.0
Sub-Saharan Africa	0	0.0
Middle East & North Africa	0	0.0
North America	0	0.0
Antarctica	0	0.0
Multiple	6	18.8

FOCUS GROUP THEMES

A codebook consisting of 23 codes was developed across the following six areas: healthy travel preparation (6 codes), modalities for health education (4 codes), perceived efficacy (2 codes), perceived risk (4 codes), travel abroad (2 codes), and message testing storyboard 1, 2, 3 (5 codes) (see Table 8).

Table 8. Focus group themes

Focus Group Themes		
Code	Definition	Example
Healthy Travel Preparation (6 codes)		
Travel Health Concerns	Participant describes the health issues they are worried about.	"I guess just in general, if I got hurt where would I go."
Plans and Precautions	Participant describes what they plan to do or what they did before studying abroad and any precautions they took or plan to take.	"Making sure you have your medication ready and everything and know the closest pharmacy in the country you are going to..."
Preventing Travelers' Diarrhea (TD)	Participant describes what they plan to do or what they did to prepare for travelers' diarrhea.	"I take my own medicine and don't eat strange food."
Treating TD	Participant describes what they plan to do or what they did to treat travelers' diarrhea.	"I think you're supposed to like get rest and drink like Gatorade or something. I'm not sure."
Causes of TD	Participant describes things that cause travelers' diarrhea.	"Um, like just bad water."
Difficulty in Preventing TD	Participant describes things that make it difficult for students traveling abroad to prevent travelers' diarrhea and ways to overcome these barriers.	"It was brushed up in the videos that you might get sick because you're not use to the food, and it doesn't tell you that you might want to ease yourself into eating. Or like medicine wise. I don't remember receiving that type of guidance."
Modalities for Health Education (4 codes)		
Friends and Family	Participant mentions they prefer to get their health information from family or friends.	"My family and my parents."

Doctor	Participant mentions they prefer to get their health information from the doctor.	"I mean I have a doctor in my family so it's kind of convenient to ask Uncle Ramon. Hey what do I do, and he'll like you know give me a call or text."
Media (TV, Online, Pamphlet)	Participant mentions they prefer to get their health information from TV, online, and pamphlets.	"I google and then I decide that I'm dying. So we WebMD things and we obviously the answer is always you always have cancer. You got a headache. Clearly cancer."
Social Media	Participant mentions if they like getting health information from social media.	"Like if I saw on Facebook some kind of fever was breaking out in some kind of country I guess I would listen to it if I saw it multiple times."
Trust	Participant describes a trusted source	"If it were CDC, UGA, or .gov or .org, I probably would trust it more than just certain pages I follow."
Perceived Efficacy (2 codes)		
Response Efficacy	Participant describes whether the selected proposed solutions are effective or not effective in preventing travelers' diarrhea.	"I think #1 [eat fully cooked meals] is also generally important because just like anything. Like when you go to a restaurant and you can ask for the steak rare but you could also get food poisoning from it so it's just common sense to probably eat things that are fully cooked."
Self-efficacy	Participant describes whether they feel confident or not confident in doing selected proposed solutions to prevent travelers' diarrhea.	"I'm going to say not confident because I'm going to pay for it and hope that they peel it for me already."
Perceived Risk (4 codes)		
High Threat	Participant feels there are serious consequences or a high likelihood of getting travelers' diarrhea.	"I think it would be pretty detrimental because like at Oxford if you miss one class that would be technically grounds for them to send you home."
Low Threat	Participant feels there are not serious consequences or there is not a high likelihood of getting travelers' diarrhea.	"I have a pretty strong immune system for the most part. I don't think I've ever really been sick, like never been hospitalized or anything, so I feel like I might be one of those three out of ten that doesn't get sick."

Perceived Severity	Participant describes the level of severity of consequences for getting travelers' diarrhea.	"You could be in the bathroom all day and wouldn't be able to go out and explore the country."
Perceived Susceptibility	Participant describes their level of likelihood they will get travelers' diarrhea.	"At some point I just assumed just because I'm trying so many new foods it might mess up my system. So I just assumed, yes like 80 or 90 percent [likelihood]."
Travel Abroad (2 codes)		
Previous Experience	Participant describes their previous experience traveling abroad with friends, family, a group, or no experience.	"I've just traveled with family a lot."
Reasons	Participant describes their reasons for studying abroad.	"I studied abroad because I've never been out of the country before and so getting class credits was a good reason to like help my parents let me go."
Message Testing Storyboard #1, #2, #3 (5 codes)		
Positive	Participant has a positive comment about the storyboard.	"[I like that] It's kinda like what everyone thinks study abroad would be than what it might actually be."
Negative	Participant has a negative comment about the storyboard.	"It was weird that it asked "would you rather be here" on every activity but then when we switched to the toilet it only said "or here" once on the toilet. It's just like my own brain. If you were going to have "would you rather be here" on every single one and then only on one have "Or here," I don't know that just messes with my brain."
Additions and Changes	Participant makes a recommendation on what to include in the storyboard.	"Maybe you could use like actual UGA kids with the flag and stuff so that it captures their attention. Like this could be you."
Design of Instagram Post	Participant describes a design element that the video could include.	"I feel like some of the pictures could not always be on adventure and more like a local kind of life, like maybe shopping or going to historical places and not necessarily always outdoors."
Educational Content for Instagram Post	Participant describes some aspect of educational content that the video could include.	"I think having a quick statistic is going to get people. That's like your punch line. You want people to know that."

Travel Abroad

The majority of participants in the focus group sessions had traveled before with family, friends, on a school trip, on a church trip, or by themselves. Only three participants noted during the discussions that they had never traveled abroad before. All participants were excited about traveling abroad and indicated their reasoning for studying abroad. There were three main themes about traveling abroad including having a worldly experience, learning a language, and having a sense of independence. As one participant stated, “For Morocco the foreign language because I am also an Arabic major. England because they have a different legal system and I wanted to learn more about legal things there” (Focus Group 4, PostB). Apart from getting an academic experience, participants wanted to have a cultural experience and explore different perspectives. As one participant stated, “So being able to step in some other country’s shoes. Regardless of what you’re studying, just to see in the news what their perception of America is would be interesting. Because it’s probably not the best” (Focus Group #3, PreB). A second participant noted, “I think the world is a lot bigger so just generally I think it would be nice to experience something outside of our country that would really be beneficial in the future. So I think that is like the main reason why” (Focus Group #1, PreA).

A few participants mentioned their desire for independence when they study abroad. As one participant noted, “The reason why I went to South Korea is because I’m Korean American but I’ve never gone to South Korea. My parents were always like against me going so I was like I have to go to prove to them that I want to go but also to kind of like go against what they say. I’m a bit of a rebel” (Focus Group #2, PostA).

Healthy Travel Preparation

Healthy travel preparation included themes such as travel health concerns, plans and precautions, prevention of travelers' diarrhea, causes of travelers' diarrhea, difficulty of preventing travelers' diarrhea and treatment of travelers' diarrhea. The majority of participants had overall health concerns of food poisoning, malnourishment, seeking immediate care if needed, and vaccine protection. One participant recalled their last trip to Vietnam and felt worried about food poisoning stating, "I actually got food poisoning like a week into the trip. It was just not as sanitary as it is over here and my body was just adapting to it because it eventually just went away and I was ok with eating the food afterwards" (Focus Group # 1, PreA). There were participants who expressed no prior travel health concerns and mentioned they felt at ease because the countries they were visiting had universal healthcare, pharmacies everywhere, or were part of the University of Georgia system. One participant stated, "I knew France has a universal health care system. I had a friend who was sick there once and they just went to the doctor. It was free. It was amazing. I was like if I get sick, it's not that big of a deal, they have free health care there" (Focus Group #2, PostA).

Participants also discussed what they plan to do before they go on their trip or different precautions they took while studying abroad. They expressed interest in learning about the culture, language, and places to go as well as making sure they received required vaccines and medical checkups and filled their prescriptions. One participant spoke of the importance of getting insurance and stated, "I think we were required either by my program or the study abroad center to get some type of insurance policy. So I like printed that out and took it with me in case I needed it" (Focus Group #2, PostA).

In terms of preparing for and preventing travelers' diarrhea, participants talked about a variety of ways to prevent diarrhea such as bringing their own food, buying their water, bringing medication for travelers' diarrhea, researching what to eat, checking sanitation levels at restaurants, and asking locals for restaurant recommendations. A couple of participants spoke of the importance of easing their way into the cuisine and making sure their body was accustomed to the type of food they would have in country. As one participant stated when asked what helped them prepare for travelers' diarrhea, "Just drink a lot of water and when you get there try to ease your way into the cuisine" (Focus Group #4, PostB). Some mentioned that they never received training before they went abroad and thought that it could not be prevented. One person spoke about staying hydrated but also not receiving prior information about preventing travelers' diarrhea, stating "No one has ever informed me about needing to be careful of symptoms of diarrhea and stuff like that so I wouldn't even know where to start" (Focus Group #1, PreA). Another participant spoke of the difficulties in preventing travelers' diarrhea and recognized that language level played a role in preventing diarrhea. "The language barrier is definitely the biggest problem because if you don't speak the language and even if you have a minimal grasp of the language, you can get things wrong and this is never a good thing" (Focus Group #1, PreA).

Participants also discussed different causes of travelers' diarrhea such as leaving food out, eating things you normally don't eat, eating raw food, going to unsanitary restaurants, and eating local foods. A focus group participant also noted, "drinking the water from a country that doesn't clean their water" (Focus Group #1 PreA) would cause diarrhea. To treat travelers' diarrhea participants mentioned taking over the counter medicines, staying hydrating, getting rest, and eating healthier. One participant noted, "I don't know what it was but I just got pills

over the counter at the pharmacy [where I studied abroad] and it stopped everything” (Focus Group #2, PostA).

Modalities for Health Education

The modalities for health education included themes of receiving health information from friends, family, a doctor, and media, including TV, Online, print, and social media. Some participants noted receiving or asking for health information and advice from their friends or family, specifically their parents, but there were varied responses. One participant noted, “Personally, usually from friends and family. I have a doctor in my family so it’s kind of convenient to ask Uncle David. Hey, what do I do, and he’ll give me a call or text. But outside of that, when I’m here [at school], for example, I was even more congested than I am now, I asked my friends. Hey what do you all do” (Focus group #3, PreB)? Another participant pointed out they self-diagnose using information they find online. The participant stated, “I self-diagnose a lot from just the internet. I prefer using certain medical websites just because I can get other opinions from not only doctors, but also people who may have been in that situation. So you can see what they did, like to get rid of it or what their symptoms were and how they relate most to you” (Focus Groups #3, PreB).

When asked about their preference on getting health information from social media, there were mixed reviews from the focus group participants. One participant indicated, “I think if there was some kind of huge outbreak and public health people were using social media health outlets to reach out to people, I would listen if it was like a promoted thing almost. If I saw on Facebook some kind of fever was breaking out in some kind of country I guess I would listen to it if I saw it multiple times” (Focus Group #2, PostB). Conversely, other participants shared they don’t like receiving ads, stating “I don’t like it because I follow people who I want to follow. So I hate like

seeing ads or like having to go look at education things in social media. So I don't like it" (Focus Group #1, PreA). Another participant pointed out, "As much as I don't like ads popping up, I do like them. It's just like something random out of your day and it's usually just something that I wouldn't have found otherwise" (Focus Group #1, PreA). Participants didn't mind receiving health information from social media, but it depended on the source. If they did receive health information, it would need to be from a credible account, such as CDC. As one participant stated, "The CDC may have like a Twitter account, so that's pretty credible, versus like your friend" (Focus Group #3, PreB).

Perceived Risk

The focus group discussion revealed participants' level of perceived risk of travelers' diarrhea. In Focus Group 4, PostB, none of the participants had travelers' diarrhea during their study abroad experience and most of the participants from Focus Group 2, PostA, had travelers' diarrhea while abroad. The majority across all focus groups (pre and post travel) felt the consequences of getting travelers' diarrhea (perceived severity) and their likelihood of getting travelers' diarrhea (perceived susceptibility) were serious and high. They mentioned that their perceived severity depended on the personal choices they would make. For example, it was dependent on the country they went to, how close they were to a clinic, how well they stayed hydrated, and what they chose to eat. Across all four focus groups, the responses ranged from not being worried about the severity of getting travelers' diarrhea to feeling they could die from travelers' diarrhea. However, the majority, believed there was a risk but it was not as extreme as death. They emphasized that if they had travelers' diarrhea they would not be able to enjoy their study abroad experience and were concerned about missing class.

One participant was very extreme with the severity of travelers' diarrhea and stated, "Yea, because diarrhea kills you. You get dehydrated. So you just drink plenty of fluids" (Focus Group #3, PreB).

Another participant who did not have travelers' diarrhea shared the same sentiments after hearing others' experiences and stated, "It sounds pretty terrible, I would never want to have that. I'm very thankful that I did not. It definitely sounds like it impedes your daily life, like multiple days to recover from that. Yeah it sounds terrible" (Focus Group #2, PostA).

A third participant indicated the severity depended on the location, stating, "Yeah I would say how close you are to some medical facility. It could be bad, right, but it could also be easily fixable" (Focus Group #1, PreA). While another participant's perceived risk depended on what they ate or depended on the weather, saying, "I think it depends on what you've eaten as well. Because there is a big difference in having diarrhea from something like beans versus like a dairy product. I think, I guess like the weather too. Because the environment affects how you feel. So if it is really hot and you got diarrhea you are going to feel it ten times worse" (Focus Group #1, PreA).

Participants' responses varied when asked about their likelihood of getting travelers' diarrhea while studying abroad. Some expressed that they didn't think there was a chance of them having travelers' diarrhea while others thought there was no doubt they would get travelers' diarrhea. Among those who felt they didn't think they would get it, one participated explained, "I mean I have a pretty strong immune system for the most part. I don't think I've ever really been sick, never been hospitalized or anything, so I feel like I might be one of those three out of the ten that doesn't get sick" (Focus Group # 3, PreB). While another participant conversely noted, "At some point I just assumed just because I'm trying so many new foods it

might mess up my system. So I just assumed, yes like 80 or 90 percent” (Focus Group #4, PostB).

In the Extended Parallel Process Model, there are two levels of Risk, a high threat or a low threat. Perceived severity and perceived susceptibility both fall under the category of “Perceived Risk.” Using the EPPM, the responses were categorized as being a low or high threat for both perceived susceptibility or perceived severity. If a participant mentioned they thought there was a high chance of getting travelers, but felt there was a low severity and were not worried about travelers’ diarrhea, then they were coded as Low Threat. If a participant mentioned they had a low chance of getting travelers’ diarrhea and felt that consequences of getting travelers’ diarrhea were severe, then the responses were coded as “High Threat.” Each participant was coded as having a High Threat or Low Threat even though they may have only had a response to one theme, perceived susceptibility or perceived severity.

Perceived Efficacy

The results showed how focus group participants believed most of the three proposed solutions for preventing travelers’ diarrhea were effective and they were confident they could perform most of the proposed solutions. The proposed solutions are as follows:

Choose foods and beverages carefully to lower your risk of diarrhea:

- Message #1
 - Eat only food that has been fully cooked and served hot.
- Message #2
 - Do not eat fresh vegetables or fruits unless you can peel them yourself.
- Message #3

- Drink only bottled, sealed beverages, and avoid ice—it was likely made with tap water.

During each focus group discussion, each participant filled out a piece of paper, Choose Foods and Beverages (Appendix C), and selected which message (#1, #2, or #3) they considered the most doable. Participants selected as many or as little as they wanted. This result of their selection were applied to the Extended Parallel Process Model (see Table 2). The participant circled a message, the researcher coded that message as High Efficacy. If the participant did not circle the message, then the message was coded as Low Efficacy. Most participants found message #1 and #3 doable.

Message #1 Fully Cooked and Served Hot

Participants found message #1, eating fully cooked and served hot food and message three, drinking sealed beverages more feasible compared to message #2 of peeling fruits and vegetables. They generally preferred hot food, and it was a preventative action they would do while abroad. As one participant commented, “I think #1 is, I could see it as being important. You prefer to eat something that is hot than cold. I think it’s just generally better” (Focus Group #1, PreA). Participants also recognized that they may choose food that is hot but there may be additional factors that could cause travelers’ diarrhea that were out of their control, such as unsanitary food practices of the restaurant or food preparer. One participant noted, “When you go to a restaurant and you can ask for the steak rare but you could also get like food poisoning from it so it’s just common sense to probably eat things that are fully cooked. Especially in a country that you are not familiar with. So like here if you get a medium rare steak you can guess that it will probably be ok but if you don’t know about the sanitation practices at another place you might not be all that confident in them” (Focus Group #1, PreA). A second participant

agreed and stated, “I feel like #1 [most doable] also depends on how the food was prepared. Because it might be good food but if it was prepared in dirty dishes or something then it doesn’t really matter either way” (Focus Group #1, PreA).

Additionally, some participants did not feel confident in eating food fully cooked and served hot since they loved eating cold sandwiches and cold food such as sushi, and would eat cold food when they studied abroad regardless of the prevention message. As one participant shared, “I like cold food too so even though it’s like good advice I don’t know how well I’ll actually do it” (Focus Group #1, PreA).

Participants were afraid of not knowing if something was fully cooked and indicated that the messaging should be more specific to only meat or specific foods. One participant said, “I imagine eating at restaurant too and not being aware if things are fully cooked and served hot. That’s pretty much the same case in U.S. too. You don’t know if it’s fully cooked and there’s always that foodborne illness warning” (Focus Group #3, PreB). Another participant indicated, “[#1] says like food instead of meat and that’s a lot. There’s a lot of foods that aren’t hot or fully hot. Like sandwiches and most breakfast foods are just fine. Or like salads. Things like that you wouldn’t think anything of. So I don’t know if that covers that, or it’s just a little like missing some things here I feel like. The interviewer responded, “So would it be better if it was more specific about what types of food, what’s included in foods?” and participant replied, “Yeah” (Focus Group #3, PreB).

Message #2 Peeled Fruits and Vegetables

Out of the three prevention messages, eating peeled fruits and vegetables was the message participants commented was the most challenging and not feasible for them to do. During the focus group discussion, they expressed not being able to be in control of the food they

ate since they said they were on a campus that served them food or were in a host family that provided their meals for them. One participant stated, “#2, sometimes when the food was prepared for us there was no way that we could physically get our hands on them ourselves and like prepare them” (Focus Group #4, PostB). A second participant stated, “It just says do not eat fresh vegetables or fruit unless you can peel them yourself. I don’t see myself out there peeling my own fruits and vegetables when I’m studying abroad. I see myself going to like a restaurant and eating them as a side or something like that and like forgetting that this is a thing, and not really thinking about it” (Focus Group #1, PreB). Participants also felt confident that if they paid for the fruit or vegetable at a nice restaurant it would be ok to consume. One participant stated, “I’m going to say not confident because I’m going to pay for it and hope that they peel it for me already (Focus Group #1, PreA). Some participants also expressed loving fruit and it being difficult not to eat, “I said one and three because quite frankly if I could just survive off of fruit I probably would and do nothing else” (Focus Group #1, PreA).

A few participants thought the proposed solution of peeling fruits and vegetables was doable as one participant said, “I chose #2 but I said it would depend because I think she mentioned a good point. Like strawberries, you can’t really peel it. But there are certain fruits that you could peel them so you could at least have something” (Focus Group #1, PreA). However, another participant stated, “I would say really just depends on if I was buying off the side of the road I would definitely want to peel it but if it were a nice 5 star restaurant I would assume they would peel it for me” (Focus Group #1, PreA).

Message #3 Bottled Beverages and Ice

Overall participants expressed that message three on drinking bottled water and avoiding ice was the most effective at preventing diarrhea. They emphasized that this was easy to do while

abroad since bottled water was very accessible, they could always purchase it on their own, and could put their beverages in the refrigerator to avoid ice. One participant stated, “I think number 3 is really effective because when I went to countries in Asia during the past few years, everyone says don’t eat the ice or only drink like bottle water. So yeah, number 3 is very effective” (Focus Group #1, PreA). Other participants agreed and mentioned that some countries do not offer ice in their drinks so it is not a concern. One participant said, “In Europe they aren’t that big on ice so that really wasn’t an issue. Especially when you are a tourist and you ask for water they are going to give you the bottled water because it is more expensive so they can charge you for it. So unless you know to ask for tap water they will give you bottled water which is safer. So I think number 3 is extremely easy” (Focus Group #4, PostB).

A few students expressed that there were times when they did not drink from a sealed beverage and instead drank tap water. They recalled being served juice that was made with tap water by their host family, feeling peer pressure to eat and drink the same thing as locals, being unable to purchase bottled water because it was expensive and they were on a budget, and preferring ice in their beverages. As one participant stated, “I went to Mexico and I was just fine when I drank it. I mean it was still a risk I shouldn’t have taken. But when everyone else is accustomed to it. Especially if you befriend some locals and just having a good time with them you know kind of the whole thing about peer pressure is of course it’s not as extreme in this circumstance because it’s just water.” (Focus Group #3 PreB). Another participant mentioned tap water at restaurants as well as tap water from their apartment. “We were told we could use tap water if we wanted to in our apartment, but we would get two liter bottles of water from the store. It was a lot more convenient plus we knew it was safe and we weren’t really risking

anything. But I feel like at the restaurants it is kind of difficult because it's not always sealed” (Focus Group 2, PostA).

Message Testing Storyboard #1, #2, # 3

There were two major themes of design and content throughout each focus group discussion on the message testing storyboards #1, #2, and #3. With regard to design, participants expressed both positive and negative comments on images, font, and overall style of the storyboard. They also made recommendations on changes and additions they would like see implemented in the new video based on the storyboard discussions. Since there was minimal content to each storyboard, the participants commented on the placement of the text and if it was easy to understand. The following results are divided into four sections, 1) All Videos, 2) Storyboard #1, 3) Storyboard #2, and 4) Storyboard #3. The first section will describe the results that transcended across all storyboards, while the remaining results from Storyboard #1, #2, and #3 are unique results for the one specific storyboard.

All Videos

Personal Experience

Among the three video storyboard discussions, participants recommended to add a personal experience or anecdote to the future video. One participant noted, “Even like a personal experience of someone or an anecdote of someone who has had problems and how they could have changed that” (Focus Group #4, PostB). Another added, “Maybe you could use like actual UGA kids with the flag and stuff so that it captures their attention. Like this could be you” (Focus Group #1, PreA).

Additional Statistics

Throughout the discussions, regardless of the storyboard, participants underscored the need to add a statistic on the percentage of students who get travelers' diarrhea and felt that it would set the scene. A participant stated, "I would still incorporate the statistics as well in this video and after they say 'were you here or here' and then say 'did you know that this could happen' and that makes it like OOOhhh that's actually a possibility after doing that comparison" (Focus Group #2, PostA). Another participant commented, "I think maybe put in the fact, or like saying 70% of study abroad people get travelers' diarrhea at the beginning so you kind of know what the video is going to be talking about and putting information throughout instead of just at the end" (Focus Group #3, PreB). Another participant agreed and stated, "If we're talking about things that we might critique about it, the first thing I thought about was to add that jarring statistic at the beginning. Because if I was scrolling through Instagram and I just saw a picture of someone surfing, I would keep scrolling because I wouldn't really relate that to my life. But, if I was like oh, shit, I might have the shits then I would keep watching to see what they say" (Focus Group #2, PostA).

Additional Info

When discussing additional components to add to a future video, participants expressed adding where Instagram viewers could go for more information. One participant said, "A number of a local doctor or like if you do end up getting travelers' diarrhea just like a local source who they can go and talk to who also knows English but also or just like 'you can go here for if you need more information on how to treat travelers' diarrhea'" (Focus Group #4, PostB). Secondly, a participant noted, "Also proactive versus reactive information, if you do get sick what can you do. Who to reach out to" (Focus Group #4, PostB). Lastly, a participant noted, "I don't know if

you would want to have someone click on a link or something but maybe you could put a link or something to get more info in the comments, but other than that I think anything else would be too much” (Focus Group #2, PostA).

Participants also wanted alternatives to the prevention message and the causes for getting travelers’ diarrhea. For instance, “Maybe if there were some other suggestions on preventing diarrhea because if you can’t get hot meals all the time then what else can you take precautions around like even before going to the country” (Focus Group #4, PostB). Another participant expressed, “I think it would be better to show what could lead to getting travelers’ diarrhea instead of just pictures of toilets and studying abroad” (Focus Group #3, PreB).

Audio and Captions

When asked about something that the participants did not like, they expressed that they would prefer the video to have audio. They also wanted captions added to the video, “Just to make it more accessible to non-hearing people (Focus Group #3, PreB). Another participant added, “And if you are scrolling, most of the time you are on the phone, you don’t have the sound on so the subtitles are nice because they kind give you a glimpse of what it is going to be about” (Focus Group #4, PostB).

Images

Participants recommended adding other travel scenes such as shopping and sightseeing. One participant stated, “I feel like some of the pictures could like not always be on adventure and more like a local kind of life, like maybe shopping or going to historical places and not necessarily always outdoors (Focus Group #4, PostB). Another participant mentioned to change some of the images in the video and stated, “I think it is kinda strange that they are all facing away from you. So you don’t really see that they are people” (Focus Group #4, PostB).

Participants enjoyed seeing photos of real scenes they might expect while studying abroad. One participant stated, “There were pictures of things overseas and it gave me like a real like expectation. Like something you might not think about. So to prepare for that, I appreciated it.” (Focus Group #3, PreB).

Throughout the focus group discussions, participants recommended showing food in the storyline. As one participant explained, “If you are going for water, I like the pictures of the water. But there is no pictures of the food. And if that is one of the messages you are trying to come across, it doesn’t really connect that well (Focus Group #4, PostB). Another agreed and said, “I feel like maybe you can include more of the food aspect to it instead of just the water. Or like show other causes and not just like it could be water” Focus Group #4, PostB).

Style

Within the video, it was suggested by one participant to add a meme. “Ok I’m going to sound like a millennial when I say this but maybe put like a meme in there of someone lifting their hand to the head. Like if someone knows they got diarrhea and like maybe a really common cause of diarrhea then you could be like aw man I should have not drank that tap water or I shouldn’t have eaten that fish from the vendor market” (Focus Group #4, PostB).

Length

Participants expressed keeping the post short and stated, “One thing I would be careful of is making it too long, because I know for me one of the things I thought about in the first video is it’s a little too long for Instagram video with the content. Because for me if I’m not drawn in immediately or if I’m watching it for a second, I’m just going to scroll past it and not even think about it” (Focus Group #2, PostA). They also cautioned about having too much information on the post. As one participant stated, Yeah when I’m on Instagram video I’m not looking to read.

Yeah while I'm scrolling on the feed I literally will see if it's a lot of reading and if it is I won't read it because my brain will just not let me. If you put anything else, I would be a little more apprehensive to continue watching" (Focus Group #2, PostA).

Trust

At the time of discussion, participants did not know if the video would be posted as a promoted ad or organically through Instagram by an organization or institution. Participants agreed that they would trust a post from a .gov, org, or a .edu source. As one participant noted, "If it's purely for informational purposes like I said, the CDC or a certain group that does study abroad that's like a .gov or .edu, I probably would believe it a little more" (Focus Group #2, PostA). Another participant stated, "I think that's key with the length too because if I even start to think they're trying to sell me something I'm scrolling away. Or if it's like a sponsored thing I'm probably scrolling away" (Focus Group #2, PostA). Lastly, when addressing trusted sources, a participant recommended adding text from the trusted source and stated, "Maybe [add] a citation of like, this isn't like an advisement, but this has been advised by the CDC, would make it more likely that people would actually follow it" (Focus Group #3, PreB).

Storyboard #1

This short storyline opens with the text "Would you rather be here" displaying action photos of adventure such as jumping off a cliff and riding an ATV (see Figure 1 and 2). It then states, "Or here," showing first a graphic of a girl squatting (see Figure 3) and then a series of images of toilet around the world that are unsanitary (see Figure 4). The second to the last slide of the storyline shows a clean toilet with the text, "Travelers can take precautions to avoid diarrhea" (see Figure 5). The last slide is a black slide displaying the prevention message #1, "Eat only food that has been fully cooked or served hot" (see Figure 6).

Extreme Reality Scenes

Overall, participants preferred the SENTAR (SENSation seeking TARgeting) approach for a high sensation seeking messaging showing graphic and intense stimuli at a fast past (Edgar & Volkman, 2012). The participants noted the extreme situations going from an adventurous experience to the reality of what study abroad could be with the realistic toilet scenes. As one participant noted, “It’s kinda like what everyone thinks study abroad would be than what it might actually be” (Focus Group #4, PostB). Another participant said, “It made you think like twice about your decisions” (Focus Group #4, PostB).

Formatting

Participants preferred changes to the font. As one participant noted, “The text was kinda strange. It was a little top left” (Focus Group #4, PostB).

Images

Participants enjoyed seeing the beautiful images but did not enjoy the toilet scenes as one participant stated, “I may not like looking at toilets but it’s very important to know about what you will be experiencing with travelers’ diarrhea” (Focus Group #1, PreA). One participant emphasized, “I think for it to be more effective to put like the nicer toilets in the beginning and get decreasingly worse as they go on” (Focus Group #4, PostB). Another stated, “I liked how on some of the pictures they are sitting down because it is like contrasting, like sitting on a toilet versus sitting on that spot, so when they are standing I don’t know if it would have the same effect” (Focus Group #4, PostB).

Phrasing

One participant preferred this opening introduction of “Would you rather be here,” and stated, “I kinda liked, well I do not remember if the other video said ‘would you rather be here or

here,’ but I liked the would you rather be here or here. It drew me in more than the intros of the other two videos” (Focus Group #2, PostA). However, another participant thought it was confusing and stated, “I liked that too, but at the same time I don’t like that every slide said ‘would you rather be here or here’ because it kinda made it seem like would you rather be here jumping off a cliff or here on a motorcycle” (Focus Group #2, PostA). Participants preferred that similar to the “Would you rather be here” the “Or here” should be added to each scene rather just being at the beginning on one slide (Focus Group #2, PostA).

Another participant mentioned they preferred the two end slides and stated, “I appreciated that wording because it was kind of saying like there are things you can do. And then like the next slide was like do this to help. And it made you understand more what was happening with the words (Focus Group #3, PreB).

Figure 1. Would you rather

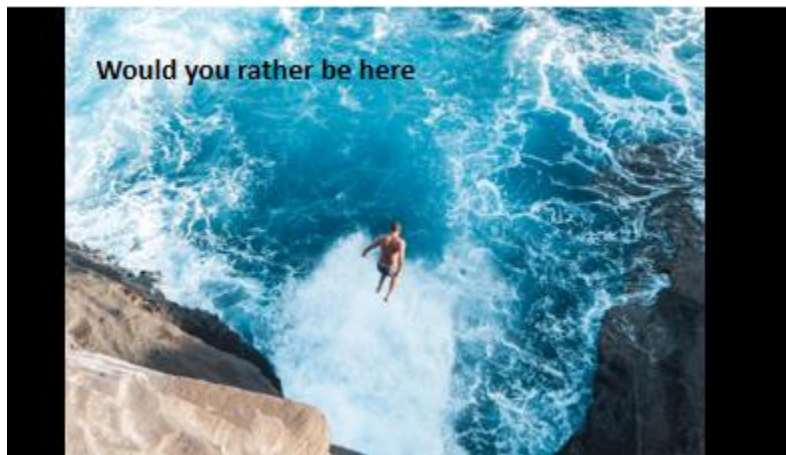


Figure 2. Sitting down overlooking landscape

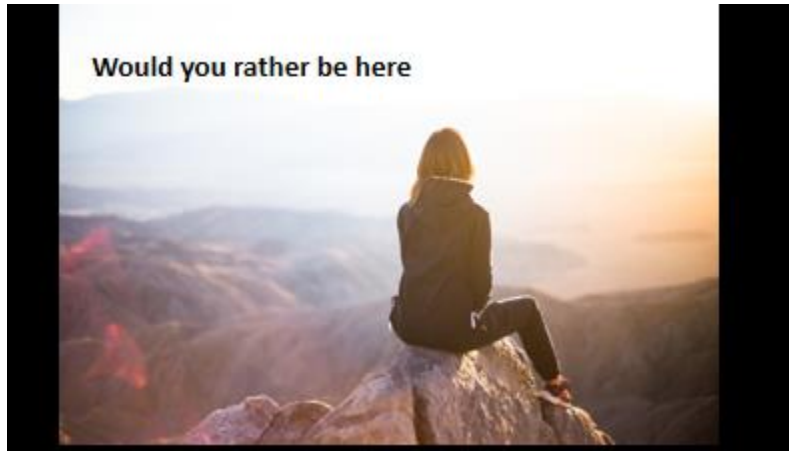


Figure 3. Toilet graphic



Figure 4. Toilet scene



Figure 5. Clean toilet with message



Figure 6. Last slide with prevention message #1, hot food



Storyboard #2

Phrasing

Participants discussed how to capture someone's attention on Instagram in a short amount of time. One person suggested to open up with the prevention message first instead of having it at the end, stating, "I feel like maybe if it was not black and more like colorful it probably would attract more attn. but also the words are like better to put in the beginning because people would actually want to read it" (Focus Group #4, PostB).

Another participant did not like the phrasing in video 2 and expressed, I don't really like this one because of the slogan they picked. Like pick fresh fruits and vegetables for yourself. It's just not possible when you're going away and order at a restaurant and get a plate that doesn't have vegetables, probably isn't going to happen" (Focus Group #2, PostA).

Design Flow

During the focus group discussions, there were mixed reviews on starting with the adventure scenes or beginning with the toilet scenes. Some participants mentioned they would be attracted to watch more if they saw the strange toilet scenes first. While others said they would be turned off by the toilets, would not want to watch the rest of the video, and would scroll away. One participant noted, "I think I like the transition better from the toilet to the places" (Focus Group #4, PostB). Other participants in the group agreed they preferred toilet scenes first. "They kinda grab your attention. I like the slogan in this one better where it's wrapping up with how fun your experience could be. Whereas the other one you're having fun and then it's like bam! You're life sucks. But this one is like hey look how fun it can be if you follow these" (Focus Group #2, PostA). Another participant agreed and stated, "I like this one better just because it's less like "Have fun get sick" and it's more because you did this you couldn't have fun. It's a bit more clear without having to worry about text, it's more so like picture based. So you could just get the understanding from the pictures" (Focus Group #1, PreA).

Other participants felt the toilet scene should not be the opening to the video. As stated by one participant, "I do think starting off with just the pictures of people on the toilet is not the most pleasant way to catch somebody's attention" (Focus Group #3, PreB). Others struggled on which scene to have first, as commented by one participant, "I'm having mixed opinions because I think that when you are putting it out there in social media. Definitely the first one [video 1]

would be better because it would catch people's eyes but this one was a lot more clear in terms of its message because while the first one, was like oh it's eye catching but all of a sudden came diarrhea, it kinda caught me off guard. But if you put it like Oh you can prevent diarrhea and as a result you get this. It seems a lot more clear but I just don't know how you would put it out there in social media like effectively" (Focus Group #1, PreA). One participant recommended, "I think you could have good aesthetics first and then have a diarrhea message precaution message and then go back to aesthetics and that will make it a little more clear for people" (Focus Group #1, PreA).

Images

Video 2 started with a graphic of a toilet (see figure 7) and participants preferred the images have continuity. "If you're going to do stick figures maybe do them through the whole video. Or if you are going to stick with real pictures have it go all the way through. It just doesn't quite match up when they're mixed together" (Focus Group #2, PostA). They felt that people would respond better to real images versus art. As one participant stated, "It makes it more personable if that's something that you might actually encounter" (Focus Group #2, PostA). However, they did not want the video to include a real image of someone on a toilet. "You could show someone sitting down that's sick, but it doesn't really have to be them sitting on the toilet" (Focus Group #2, PostA).

Figure 7. First slide toilet graphic



Figure 8. Clean bathroom with message



Figure 9. From here text with jumping off cliff

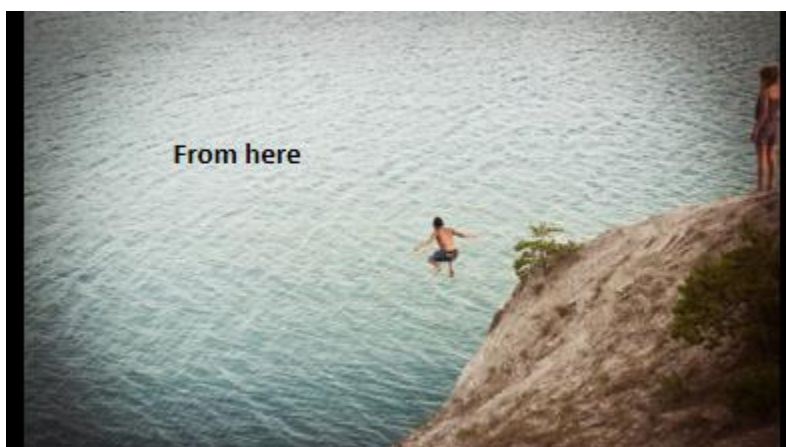


Figure 10. Last slide with prevention message #2, peel fruits and vegetables



Storyboard #3

This last storyboard starts with adventure, action scenes and leads up to the phrase, “Studying abroad is an experience of a lifetime” (see figure 12). In a split second, it transitions to a toilet graphic that says “Don’t have this take away your fun” followed by a series of toilet scenes from around the world (see figure 13). The main prevention message for this storyboard is drink bottled and sealed beverages only and don’t eat ice.

Phrasing

With regard to targeted messaging, a participant pointed out that they felt this storyboard clearly spoke to study abroad students and stated, “I think this one has a more specific audience in mind, like students who are studying abroad more so than the other one because it is saying studying abroad is an experience in a lifetime... If someone is studying abroad and they are seeing it, that really means like oh then like this is probably for me I should probably pay attention to this.” (Focus Group #4, PostB). Additionally, students indicated that the prevention message of drink bottled water was the easiest one to follow out of all three storyboards and stated, “I feel like this one, students are more likely to drink only bottled water and choose foods

that would lower their risk of diarrhea. I feel like those are the two that students are more likely to follow” (Focus Group #4, PostB).

Some participants felt that the wording in the prevention message was aggressive and preferred the message be reframed to focus on what to be aware of. One participant stated, “So I’m with her. I think it was kind of, like, aggressive. It should be more of a warning if you’re studying abroad. Like watch out for travelers’ diarrhea, not like pay attention to what you’re eating.” (Focus Group #3, PreB).

Design Flow

Participants’ critiques indicated a need for a better design flow. As one participant stated, “I feel like if I was not in this focus group I wouldn’t have even known it was about diarrhea or studying abroad. It was just like cool experience and then it was like if I stuck around to watch then I would know it’s about diarrhea” (Focus Group #2, PostA). Another participant agreed and stated, “I hesitate to say that the beginning was uninteresting but I thought it was trying to sell me a vacation or a cruise, not tell me hey you might get the shits while you are on vacation” (Focus Group #2, PostA).

Other participants liked the flow, commenting, “I really like the flow, you can tell there’s a flow to it. Like the beginning middle and end” (Focus Group #2, PostA). A second participant agreed and stated, “I think it sort of makes sense, I mean you’re telling a story, like I’m a marketing major, and in marketing and storyboard wise it would make sense because you’re telling beginning middle and end. The beginning you are studying abroad, middle it could be ruined by diarrhea, and then end is how you can prevent it” (Focus Group #2, PostA). A third participant commented, “I think this one is a lot better because of the message. Because it was

kinda a mix of both of them. You had the aesthetic pictures first and then you had the message and then you had the toilet. It seemed more clear” (Focus Group #1, PreA).

A couple of participants discussed the ending prevention message slide and one participant stated, “Obviously the ending slide would be the thing I probably would have stayed in my brain because it is right after all the gross toilets and then you are like oooh yeah maybe I might use that information. Maybe that could have been more flashy but it doesn’t matter” (Focus Group #2, PostA).

Images

This was the first time during a discussion group that participants mentioned there were too many images of the same scene and as a group preferred around three images only for each scene. One participant stated, “There is too many exploring pictures of the same thing. And too many toilet pictures of the same thing” (Focus Group #4, PostB). One person commented on the choice of images and mentioned, “I think the contrast between the two photos gives a severity to it, you may not be in your pristine bathroom at home where it’s comfortable and easy, which I wasn’t. I was in a dorm style bathroom which was slightly horrendous. I think it illustrates the point very well. I wouldn’t start with it but I think it illustrates it very well” (Focus Group #2, PostA). Another participant preferred a variety of images and images that involved urbanization rather than landscape adventure images. One participant expressed, “With the whole urbanization. Because this makes it feel like, you know, like you only have to worry about this if you’re out in the middle of nowhere. Like in this wildly, like you know, that kind of place. But, when the fact of the matter is that this needs to be heeded to in a million-population city. It’s still important and I think stressing that a little more could benefit this” (Focus Group #3, PreB). There was only one photo that the participants did not like and that was a photo in a nice

bathroom with the water being flushed. They thought the water looked like bubbling water (Focus Group #2, PreB).

Across the focus group discussions, participants commented on adding food scenes to show what causes diarrhea. However in this focus group one participant stated, “With this one you don’t have to put food in it because it just clicks in your brain. “Don’t let this take away.” Like obviously what you eat is what’s making you be on the toilet (Focus Group #1, PreA).

Figure 11. First slide without text



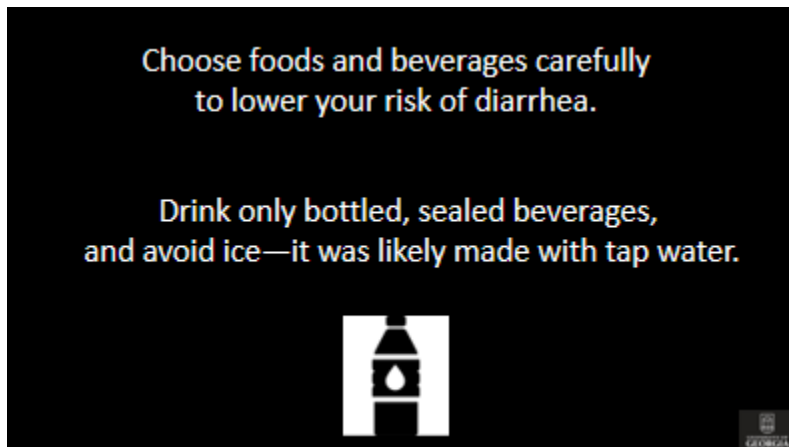
Figure 12. Studying abroad is an experience of a lifetime



Figure 13. Toilet graphic with message



Figure 14. Last slide with prevention message #3, bottled beverages and avoid ice



In summary, this study analyzed 23 codes across six areas including travel abroad, healthy travel preparation, modalities for health education, perceived efficacy, perceived risk, and message testing storyboard #1, #2, #3 (see Table 8). The results of the focus group discussions revealed that the participants' perceived severity and perceived susceptibility were serious and high. However, they mention their perceived severity depended on the personal choices they would make when studying abroad. Overall, participants expressed that message 3 on drinking bottled water and avoiding ice was the most effective at preventing diarrhea. Out of

the three prevention messages, eating peeled fruits and vegetables was the message participants commented was the most challenging and not feasible for them to do.

During the discussion, participants had both positive and negative comments on images, font, and overall style of the storyboard. The following topic areas were discussed across all three storyboards; personal experience, additional statistic, additional information, audio and captions, images, style, length, and trust. Participants acknowledged adding a personal experience to the storyboard along with an opening statistic that describes the susceptibility of travelers' diarrhea would add value to the story. They felt adding pictures of bad food choices to relate and show the causes of travelers' diarrhea would be impactful. Participants were also interested in showing more shopping and sightseeing images versus only images of landscape and adventure scenery. When addressing trusted sources in social media, participants were more likely to trust a video from a .gov, .org, or a .edu source.

CHAPTER 4

DISCUSSION AND CONCLUSION

This discussion chapter will include three final topics, a synthesis of results and discussion, recommendations for future research, and conclusions.

Using the Sensation Seeking Model and Extended Parallel Process Model, the researcher assessed focus group data to generate information on the applicability of a social media video designed and developed for sensation seeker study abroad students preparing to travel. In addition, this study determined potential adaptations to the storyboards that may be necessary to address the perceived severity and perceived susceptibility of travelers' diarrhea and the perceived efficacy of three proposed solutions for preventing travelers' diarrhea.

This paper explored risk profiles of study abroad students including their risk-taking attitudes and risk perceptions. The risk profiles helped to determine who is most at risk for travelers' diarrhea. The profile characteristics played a role in identifying the appropriate messaging and the delivery of the message to use on social media. The specific aim of this qualitative study was to understand what design and content attributes pre and post travel study abroad students perceive as key to maximize the reach of the message and increase their intent towards adoption of food and water safety precautions. The specific aim was achieved in this study.

SYNTHESIS OF RESULTS

The results of this qualitative study were reviewed in context with the original purpose of the study and related literature. The primary purpose of this qualitative study was to assess focus

group data to generate information on the applicability of a social media video designed and developed for sensation seeker study abroad students preparing to travel using the Sensation Seeking Model and Extended Parallel Process Model. Additionally, this study sought to determine potential adaptations to crafted storyboards that may be necessary to address the perceived severity and perceived susceptibility of travelers' diarrhea and the perceived efficacy of three proposed solutions for preventing travelers' diarrhea. The three proposed solutions were:

- 1) Eat only food that has been fully cooked and served hot.
- 2) Do not eat fresh vegetables or fruits unless you can peel them yourself.
- 3) Drink only bottled, sealed beverages, and avoid ice—it was likely made with tap water.

This paper explored risk profiles of study abroad students including their risk-taking attitudes and risk perceptions. The profiles helped to determine the appropriate messaging and the delivery of the message to use on social media. The specific aim of this qualitative study was to understand what design and content attributes pre and post travel study abroad students perceive as key to maximize the reach of the message and increase their intent towards adoption of food and water safety precautions.

Demographics of Participants

The four focus group discussions had a combined total of 32 participants with a mean age of 19 years old. The majority of the participants identified as white. There were more females (75%) than males (25%) in the focus group discussions which aligned with the most recent statistics of the profiles of U.S. study abroad students showing 67.3% females and 32.7% males for the 2016/2017 school year (Institute of International Education, 2017). There was an even number of two male and two female low sensation seekers and only one female had previously

studied abroad. The majority of participants considered themselves active social media users (87.5%) and Instagram was the most popular social media platform participants engaged with daily.

Among the participants, 28 (87.5%) were characterized as being high sensation seekers and 4 (12.5%) were low sensation seekers (see Table 6). Out of the four sensation seekers, only one female had actually returned from studying abroad while the other three (two males and one female) were interested in studying abroad. This showed that sensation seekers may likely study abroad compared to low sensation seekers. The most popular destination for study abroad travel was Europe, which was similar to the overall distribution among study abroad students in the 2016/2017 academic school year (Institute of International Education, 2019a).

Focus Group Themes

This study analyzed 23 codes across six areas including travel abroad, healthy travel preparation, modalities for health education, perceived efficacy, perceived risk, and message testing storyboard #1, #2, #3 (see Table 8).

Most of the participants had traveled before with family, friends, on a school trip, on a church trip, or by themselves, and only three noted that they had never traveled abroad before. The majority expressed traveling abroad to have a worldly experience, sense of independence, and learn a language. With regard to healthy travel preparation, participants discussed travel health concerns, plans and precautions to avoid travelers' diarrhea, prevention of travelers' diarrhea, and causes and treatment of travelers' diarrhea. They preferred receiving health information from a variety of modalities including friends, family, a doctor, and media, such as TV, Online, print, and social media. There were mixed reviews in receiving health information

through social media. Some participants did not mind receiving an ad or reading a post from a trusted source, while others preferred not to have ads within their social media feeds.

The results of the focus group discussions revealed that the participants' perceived severity and perceived susceptibility were serious and high. However, they mention their perceived severity depended on the personal choices they would make when studying abroad. For example, it was dependent on the country they went to, how close they were to a clinic, how well they stayed hydrated, and what they chose to eat. Participants' responses varied when asked about their likelihood of getting travelers' diarrhea while studying abroad. Some expressed that they did not think there was a chance of them having travelers' diarrhea while others thought there was no doubt they would get travelers' diarrhea.

Participants believed most of the three proposed solutions for preventing travelers' diarrhea were effective and they were confident they could perform most of the proposed solutions. Overall, participants expressed that message 3 on drinking bottled water and avoiding ice was the most effective at preventing diarrhea. Out of the three prevention messages, eating peeled fruits and vegetables was the message participants commented was the most challenging and not feasible for them to do. They expressed not being able to be in control of the food they ate since they said they were on a campus that served them food or stayed with a host family that provided their meals for them. Participants found both eating fully cooked and served hot food (message #1) and drinking sealed beverages (message #3) feasible compared to peeling fruits and vegetables (message #2). They generally preferred hot food, and it was a preventative action they would do while abroad.

The second part of the focus group was dedicated to the participants' thoughts on the design and content within the three message testing storyboards. This table outlines the major findings of the storyboard messages and is explained further in this section (Table 9).

Table 9. Summary of findings

Summary of Findings
<ul style="list-style-type: none"> • Personal experience to relate to students • Additional information and statistics • Images and style <ul style="list-style-type: none"> ○ Bad food choices ○ Urbanization images • Short length • Trust from .gov, .org, or .edu • Audio and captions

Participants expressed both positive and negative comments on images, font, and overall style of the storyboard. They also made recommendations on changes and additions they would like to see implemented in the new video based on the storyboard discussions. Participants also commented on the placement of the text and if it was easy to understand. The following topic areas transcended across all three storyboards; personal experience, additional statistic, additional information, audio and captions, images, style, length, and trust. Participants agreed to add a personal experience to the storyboard along with an opening statistic that describes the susceptibility of travelers' diarrhea. They also recommended having more information in the Instagram post for participants to learn more about preventing travelers' diarrhea. One common comment from the participants was the need to add pictures of bad food choices to relate and show the causes of travelers' diarrhea. Participants were also interested in showing more shopping and sightseeing images versus only images of landscape and adventure scenery. When

addressing trusted sources in social media, participants were more likely to trust a video from a .gov, .org, or a .edu source.

Due to the limited attention span of the student Instagram viewers, the students expressed the need to keep the video short and concise but offered a suggestion to add additional information in the post via a hyperlink or added text to the post rather than added text to the video. They also felt that adding audio and captions would benefit the video.

There were three different storyboards with unique storylines to each. The introduction to the storyline differed by various scenes, such as adventure or toilet scenes first. Overall, participants felt that the third video had a clear storyline and was directed at study abroad students. However, for storyboard #1 and #2, participants felt the need to add the causes of travelers' diarrhea, such as showing cold food or performing poor food and water precautions.

DISCUSSION

This qualitative focus group study revealed participants' awareness and knowledge of travelers' health and travelers' diarrhea and their perceived risk of travelers' diarrhea and their perceived efficacy on three prevention messages. It highlighted their preferences for the content, design, and delivery of the storyboards. The study found that participants preferred Instagram as their preferred social media platform they engage with daily. Participants liked storyboards being ultimately represented as a 10-second video on Instagram. However, they felt that their design and content could be improved. The results of this study were interpreted using the Extended Parallel Process Model. The results show that perceived efficacy differed among the three proposed prevention messages when the perceived threat was high. When examining message #1 of eat food that is hot and fully cooked, the majority of participants were categorized as being in the "fear control" category of the Extended Parallel Process Model. The "fear control" category

was based on two components of each participant's response, their perceived risk and their perceived efficacy. The participants' perceived risk was categorized as Low or High Threats and their perceived efficacy was categorized as Low or High Efficacy. According to EPPM there are four communication strategies that can be used based on the participants' responses. When examining Message #1 most participants were in the "Fear control" category. This means that people are motivated to control their fear by rejecting the recommended responses through defensive avoidance or denial of threat. Defensive avoidance is a resistance to the message received and will be inattentive to the prevention message. Witte suggests that those who fall in the fear control response will need help to increase their self-efficacy instead of making them more fearful (Gould et al., 2014). Participants should be educated about the solution only and should not focus on the threat. This strategy should also be used for prevention message 2 of peeling your own fruits and vegetables. The majority of participants had a high perceived threat and low efficacy for peeling their own fruits and vegetables. For prevention message 3, drinking bottled and sealed beverages and avoiding tap water, the majority of participants had a high perceived threat of travelers' diarrhea and a high efficacy for the proposed solution. According to the Extended Parallel Process Model, the participants should be motivated to control the danger by doing the recommended solution. They typically change their behavior to avoid the threat. When the participant has a high threat and high efficacy this outcome is defined as "message acceptance," and an individual will have an attitude, intention, or behavior change in response to the message received (Witte, 1992). The communication strategy to reach these particular types of participants should be to provide calls to action.

The Extend Parallel Process Model, states that danger control processes lead to acceptance of a health risk message while fear control processes lead to the rejection of a health

risk message. Therefore, it is important for the health risk message to induce a danger control process where people understand and can adopt the recommended solution to prevent the health risk. In this study, the results showed that their attitudes and behavioral intentions of the prevention messages #1, #2, and #3 were affected by their perceptions of risk and self-efficacy of performing the proposed solutions.

Overall, the high sensation seekers had a high perceived threat of travelers' diarrhea. Their level of perceived threat surprisingly influenced their design and content recommendations of the storyboard. They understood that travelers' diarrhea is a travel health concern and they preferred that the video have a jarring statistic to emphasize the threat. Participants also felt they needed to connect with the storyboard and suggested adding a personal experience component such as a student anecdote to the storyline. Sensation seekers are attracted to high sensation value messages including messages that are "(a) novel, creative, or unusual; (b) complex; (c) intense stimuli that are emotionally powerful or physically arousing; (d) graphic or explicit; (e) somewhat ambiguous; (f) unconventional; (g) fast paced; and (h) suspenseful" (Noar et al., 2010). The three storyboards designed for the focus group discussion used the SENTAR media strategy and images that described adventure scenes to allude to risk taking adventures. Although participants enjoyed the quick flashes of scenes, novel and intense graphic scenes based on the SENTAR strategy, they preferred images of shopping and sightseeing. They mentioned that not all students venture to have outdoorsy adventures and preferred showing the local life and historical places of where you could get travelers' diarrhea. Based on the different types of travelers, video messages could be tailored to top regions where students study abroad such as Europe. Students suggested that the images should reflect the activities from the various study abroad locations. For example, show an urban setting for a study abroad location in London or

show a rural setting for a study abroad location in rural Kenya. They also preferred to have less photos of the same type of images. They agreed that the graphic scenes of the toilets were necessary for people to understand the reality of studying abroad.

These findings are consistent with previous literature. The Extended Parallel Process Model has been used widely to examine health messages on HIV/AIDS, meningitis, cardiovascular disease, sexually transmitted diseases and pregnancy, hearing loss, and cancer (Lavoie & Quick, 2013). For a fear-appeal message to be successful, it will need to communicate both the health threat and the recommended response (Roberto, Murray-Johnson, & Witte, 2011). In a study by Lavoie and Quick (2013), they found that Truth ads for the antismoking campaign were focused on mostly severity messages, some susceptibility, and had no inclusion of self-efficacy or response efficacy response messages. The study recommended the Truth campaign would benefit from adding recommended response messages to the susceptibility and severity messages. However, they postulated the need for exploring the balance of the components in the Extended Parallel Process Model and suggested further research to explore the ideal proportion of susceptibility and severity messages and self-efficacy and response efficacy in a fear appeal message.

The results of the focus group discussions highlighted the importance of including all components of the Extended Parallel Process Model. Participants wanted to see their susceptibility to travelers' diarrhea and expressed the need to clearly state a statistic on the likelihood of getting travelers' diarrhea. They also suggested to show the causes of travelers' diarrhea due to poor food and water safety precautions. This would highlight the self-efficacy component of recommended response. Carey and Sarma (2016) similarly found that messages that contained a high threat combined with a high perceived efficacy can have a positive effect

on behavior change on young male drivers which led to a reduction in speed. They also noted that by adding a state emotion such as anger to the message, it can negatively impact the effectiveness of the message.

This focus group study builds on the existing literature and takes it a step further in examining the sensation seeker preferences for how to improve the design and content of an Instagram video storyboard. The focus group data informed the applicability of a potential social media video that can be designed and developed specifically for sensation seeker study abroad students preparing for and studying abroad. Results revealed key changes that can be implemented into the storyboards to address the perceived severity and perceived susceptibility of travelers' diarrhea and the perceived efficacy of three proposed solutions for preventing travelers' diarrhea. The risk profiles of students which included their risk-taking attitudes and risk perceptions showcased who is most at risk for travelers' diarrhea. These characteristics can assess potential appropriate messaging and the delivery of the message to use on social media. This study met its specific aim of understanding what design and content attributes pre and post travel study abroad students perceive as key to maximize the reach of the message and increase their intent towards adoption of food and water safety precautions.

Understanding preferences, attitudes, and beliefs are key to getting the message right. These results may be helpful in understanding high sensation seeker study abroad students and their need for tailored Extended Parallel Process Model prevention messages via social media.

LIMITATIONS

This qualitative focus group study has some limitations. The generalizability of this study to examine abroad student populations may be limited. This study used a convenience sample of students identified through the University of Georgia (UGA) Office of Global Engagement and

through the UGA Study Away Fair. While the demographics of the participants matched the typical demographics of study abroad students from the 2016/2017 academic school year, this sample was not representative of all the host regions of study abroad students. Additionally, there were a few students who were not from the United States and they were studying abroad in the United States. These discussions from non U.S. university students may have influenced results of perceptions of travel health and travelers' diarrhea as well as the design and content of the storyboards. Regarding sensation seekers, there were only four low sensation seekers and 28 high sensation seekers. National data does not assess sensation seeking behavior which makes it challenging to compare this data.

Reliability of the codes assigned to each excerpt can demonstrate there was a rigorous approach to the study and that there is validation to the coding scheme. Due to the methodology used in this study with only one coder involved in the study, inter-rater reliability was not able to be calculated using Cohen's Kappa coefficient. To increase reliability and validity, another coder should code the focus group data. Another alternative is to interview a group of students from the previous focus group sessions to determine if the data captured from the analysis is accurate.

Another limitation in the study was one question in the discussion guide (see Appendices A and B). The questions naturally flowed and guided the responses from participants. However, one section of the discussion guide may have primed participants and influenced their response for the perceived susceptibility code. Participants were told that 70% of students who studied abroad got travelers' diarrhea and then were asked what their likelihood of getting travelers' diarrhea was. This statement may have impacted the participants' responses for their overall perceived risk.

Lastly, since this was a focus group study, some participants were willing to share their stories and ideas than others in the discussion.

RECOMMENDATIONS FOR FUTURE RESEARCH

Further studies of high sensation seeker risk profiles for study abroad students may help to better explain students' preferences in adaptations to the messages and delivery and will reinforce how the preferences presented impact study abroad students' behavior to prevent travelers' diarrhea. More studies could also examine how factors such as age, gender, and sensation seeking traits influence preferences. Additional data on how study abroad students accept health messages through social media may also be of value. This study is an important first step in understanding pre and post travel study abroad students' perceptions of risk and efficacy and how it can be applied to message development and delivery using the Extended Parallel Process Model and the SENTAR media strategy. Future formative research should further explore perceptions of risk for travelers' diarrhea and levels of efficacy for possible solutions to prevent travelers' diarrhea using the Risk Behavior Diagnosis (RBD) scale by Witte (1996). This scale can be applied to measure responses to Instagram health messages and examine preferences of sensation seekers and how they influence behavior. Additional studies should be conducted to test health messages with sensation seeking study abroad students.

Future studies should also apply the Extended Parallel Process Model (EPPM) into food safety research and explore connecting response efficacy (avoiding ice or drinking sealed beverages abroad to reduce risk of ingesting contaminated water), to self-efficacy (being aware of the risk and actively avoiding it). This connection between variables can potentially strengthen the EPPM as a predictor for promoting healthy food and water safety habits to prevent travelers' diarrhea. In addition, the timing of when a student would receive the prevention messages prior

to or during their study abroad experience should be explored further. There may be differences in how students perceive their risk and efficacy before or during their study abroad travel.

Lastly, upon further formative research, the video messages can be added to a broader social marketing strategy to promote the prevention of travelers' diarrhea to student travelers as well as general travelers. Promotional channels such as dynamic billboards, points of entry monitors, TV commercials, and web ads could be explored to reach the targeted audience. CDC may also use the newly designed messages in a detailed communications campaign for colleges and universities across the US. Knowledge gained in this social marketing process can be applicable to other marketing campaigns at CDC.

CONCLUSION

Students traveling to study abroad, especially those who are sensation seekers, are at risk for travel related illnesses, including travelers' diarrhea. Many travelers are aware of the risk, but rarely take the necessary food and water safety precautions to avoid travelers' diarrhea. The results from this qualitative focus group study suggest that messaging designed and developed for a sensation seeker using the Sensation Seeking Model and Extended Parallel Process Model, and available on Instagram, holds promise as an effective communication strategy for reaching and influencing study abroad students to change their health behavior. Proposed solutions for taking food and water safety precautions such as drinking bottled or sealed beverages was found to have the highest efficacy among students while peeling your own fruits and vegetables and eating food that is fully cooked and served hot had an overall low efficacy among the groups. Throughout the discussions, participants found travelers' diarrhea to be a high threat. A high threat coupled with a low efficacy yielded a fear control response. For these messages to be more effective, it is important to communicate both the health threat, in this case, travelers' diarrhea,

and a recommended response (prevention messages #1, #2, or #3) to ensure that perceived efficacy outweighs the perceived threat. In doing so, this will generate a danger control process which will lead to a positive behavior change. Future research based on this study, will include a survey to measure the components of the Extended Parallel Process Model and how it impacts message design and the message's ability to produce a positive behavior change. Additional communications campaigns should be explored to broaden the reach and distribution channels of the prevention message to universities and colleges in the US. Researchers should continue to remain attentive to the ever changing social media world as well as new channels to promote visual media to reach study abroad travelers.

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APPENDIX A

Exempt Determination



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Human Research Protection Program

EXEMPT DETERMINATION

January 10, 2019

Dear [Joel Lee](#):

On 1/10/2019, the Human Subjects Office reviewed the following submission:

Type of Review:	Initial Study
Title of Study:	USE OF SOCIAL MEDIA MESSAGING TO MOTIVATE STUDY ABROAD STUDENTS TO ADOPT SAFE FOOD AND WATER PRECAUTIONS DURING TRAVEL
Investigator:	Joel Lee
Co-Investigator:	Leticia Bligh
IRB ID:	STUDY00006876
Funding:	None
Review Category:	Exempt, FLEX (7)

We have approved the protocol from 1/10/2019 to 1/9/2024.

This is an exempt study, so it's not necessary to submit a modification for minor changes to study procedure. You can keep us informed of changes that don't affect the risk of the study by using "Add Comment".

Please close this study when it is complete.

In conducting this study, you are required to follow the requirements listed in the Investigator Manual (HRP-103).

Sincerely,

William Westbrook, IRB Analyst
Human Subjects Office, University of Georgia

APPENDIX B

Discussion Guide for Message Testing (Pre)

Message Testing Materials for Pre-Travel Study Abroad Students

Introduction

10 minutes

My name is _____ and I am with the College of Public Health. I am here today as a DrPH student to get your opinion about food and water safety, travel risks, and social media storyboard videos. These storyboards are concepts of videos that are similar to videos that will be developed. Hearing your reaction to them will help us make changes to improve our videos. Your opinions are really important to us—you are the expert audience—and so we really want you to share your honest thoughts. Today's discussion will help public health professionals improve health education and communication materials for you and other study abroad students, and so your participation can help the people you care about. First, let's discuss how things will work during today's group.

- Privacy
 - Full names will not be used, and we will not keep any written record of your names nor will anyone besides researchers have access to any information collected today.
- Audio recording and observers/note taker
 - We will be using audio recorders to record today's discussion which will help us remember what you say since there will be a lot of information discussed and we won't be able to write everything down. Also, in the back of the room there is someone taking notes on the discussion which will also help us remember what you say.
 - If you are worried about your privacy, you can use a different name during the discussion.
- We want your honest opinions
 - Again, the main goal today is to get your opinions about food and water safety and a few storyboard videos, so we can make videos easier to understand by students. So, please do not hesitate to point out things that you don't like or don't understand.
- Ground rules
 - Please allow everyone a chance to voice their own opinions, even if it is different than your own. We want to hear what all of you have to say.
 - It is very important that the information shared today stays private. This means that everything that is said does not leave the room.
 - I will also ask "why" a lot because I am very interested in your opinions.
- During the discussion, please feel free to ask any questions.

Do you have any questions about what are we doing here today or anything I have said so far?

Note for moderator: if participants ask questions about travelers' diarrhea, tell them to please wait until we are done and we will try to answer them as best as we can. However, refer them to a health provider for any clinical questions.

Five Minute Survey:

Before we get started with our discussion, I would like to fill out this brief survey about your demographics and social media. Once you have completed the survey, flip it over on the table and we will collect your paper.

Focus Group Questions

1	Date of Birth (mm/dd/yyyy)	_____ / _____ / _____
2	Sex (Source: BRFSS)	<input type="checkbox"/> Male <input type="checkbox"/> Female
3	Are you Hispanic or Latino? (Source: BRFSS)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure
4	What is your race? Do you consider yourself... (Select one or more.)	<input type="checkbox"/> White <input type="checkbox"/> Black or African American <input type="checkbox"/> Asian <input type="checkbox"/> Native Hawaiian or other Pacific Islander <input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Other
5	Are you an active social media user?	<input type="checkbox"/> Yes <input type="checkbox"/> No
6	What platform do you use? (Select one or more.)	<input type="checkbox"/> Blogs <input type="checkbox"/> Facebook <input type="checkbox"/> Instagram <input type="checkbox"/> Pinterest <input type="checkbox"/> Snapchat <input type="checkbox"/> Twitter <input type="checkbox"/> YouTube
7	Which platform do you engage with daily (like, share, retweet, repost, comment)? (Select all that apply.)	<input type="checkbox"/> Blogs <input type="checkbox"/> Facebook <input type="checkbox"/> Instagram <input type="checkbox"/> Pinterest <input type="checkbox"/> Snapchat <input type="checkbox"/> Twitter <input type="checkbox"/> YouTube
8	Which platform do you use the most?	<input type="checkbox"/> Blogs <input type="checkbox"/> Facebook <input type="checkbox"/> Instagram <input type="checkbox"/> Pinterest <input type="checkbox"/> Snapchat <input type="checkbox"/> Twitter <input type="checkbox"/> YouTube

Interest and Preference Questions:

9	I would like to explore strange places	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
10	I get restless when I spend too much time at home.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
11	I like to do frightening things	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
12	I like wild parties.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
13	I would like to take off on a trip with no pre-planned routes or timelines.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
14	I prefer friends who are excitingly unpredictable.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
15	I would like to try bungee jumping.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
16	I like new and exciting experiences, even if I have to break the rules	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree

Warm-Up:

Let's go around the room. Please say your first name, the country where you would like to study abroad. **During this focus group I will be asking you questions about your interest in studying abroad. I will also ask you questions on food and water safety precautions to prevent travelers' diarrhea when you study abroad. To start some conversation, I would like for you to think of all the ways or phrases to say diarrhea?** For example, Poop, or the runs. Feel free to say bad words, catchy phrases, or even write it in a different language. See how many ways you can say it and write it down on your sticky notes.
Moderator (5min) – call out what is written on white board.

Warm-up on Awareness and Knowledge about Travelers Health 10 minutes (≤20 minutes)

Traveling Abroad

1. We would like to begin by talking about traveling. Why do you want to study abroad?
 - a. What type of experience are you looking for?
2. Have you traveled abroad before?
 - a. By yourself or with family or friends?

Healthy Travel Preparation

3. In terms of health, what health issues are you worried about?
4. What do you plan to do before you go on your trip?
5. What are some precautions you are aware of that you can take to avoid these risks?
6. What health information have you heard about to help you prepare for your trip?

Perceived Risk (Extended Parallel Processing Model)

We would like to begin by talking about travelers' diarrhea. Did you know that 70% of students who studied abroad got travelers' diarrhea (Angelo et al., 2018)?

Perceived severity

7. How serious are the consequences if you had travelers' diarrhea?

Perceived susceptibility

1. What do you think your likelihood of getting travelers' diarrhea is?

Preparation for Travelers' Diarrhea

2. What do you plan to do before you go on your trip to prepare for travelers' diarrhea?
 - a. What information have you heard about what you should do if you have signs/symptoms of travelers' diarrhea?
 - b. What information have you heard about things that cause travelers' diarrhea?

Perceived Efficacy (Extended Parallel Processing Model)

Response efficacy

3. How effective are these proposed solutions at preventing travelers' diarrhea?
 - a. Food and Beverage Selection (CDC Yellow Book): Careful selection of food and beverage when indulging in the local cuisine.
 - i. Eat only food that has been fully cooked and served hot.
 - ii. Do not eat fresh vegetables or fruits unless you can peel them yourself.

- iii. Drink only bottled, sealed beverages, and avoid ice—it was likely made with tap water.

Self-efficacy

- 4. How confident are you that you could successfully practice the proposed solution?
 - a. Eat only food that has been fully cooked and served hot.
 - b. Do not eat fresh vegetables or fruits unless you can peel them yourself.
 - c. Drink only bottled, sealed beverages, and avoid ice—it was likely made with tap water.

Modalities for Health Education

- 5. How do you prefer to get your health information? Why do you say that?
 - a. Probe: from friends, family, a health provider, radio, etc.
 - b. Do you like getting health information from social media? Why or why not?

Message Testing

30 minutes (≤ 40 minutes)

- 1. EFFICACY - I'm going to pass around a sheet that gives you some descriptions for ways to prevent travelers' diarrhea. Please review these descriptions silently, and circle those that seem most doable. Cross out any that don't seem do-able.
 - a. the moderator waits for participants to circle on their paper. Then moderator asks participants to identify the two or three tactics that they think are most important and that they have the greatest likelihood of doing (Moderator takes hand count.)
 - b. From the two or three top tactics, the participants are asked to choose the single tactic that they think is most important and that they have the greatest likelihood of implementing. The moderator explores some of the participants' choices and their reasons for choosing. Moderator asks "Why"
 - c. As you look at these strategies, does any one of the three stand out as the one that you would try first? Which one? Why?
 - d. What are the one or two things we have discussed today — if any — that seem most feasible to implement while studying abroad?
 - e. Is there any more information or tools that you would need that would help you implement some of these strategies?
 - f. What are some of the things that would make it difficult for people who are studying abroad to prevent travelers' diarrhea?
 - g. What could, or has, been done while someone is studying abroad to make it easier — to overcome some of the barriers you described?

Now, I'm going to show you a few storyboards. These storyboards will be potentially going on Instagram as a video.

Moderator Instructions: Show storyboard examples in PowerPoint for potential video messages and proceed through the questions below.

Storyboard 1 Storyboard 2 Storyboard 3

2. How would you sum up in just a few words your first thoughts about this storyboard #1, 2, and 3?
 - a. What do you like about the storyboard?
 - b. Is there anything you do not like? If so, what?
3. In your own words, what do you think are the most important ideas in the storyboard? Why do you say that?
4. What do you think about the images used in the storyboard?
 - a. Moderator: point to each of the images and ask: what does this image tell you?
 - b. Are any of the pictures confusing or hard to understand? Which ones? Any others?
 - c. If confusing, what other pictures would you use?
 - d. Are there any images that you don't like? Which? Why?
 - e. Are there any images that offend you? Which? Why?
 - f. How would you change the storyboard to make the video better?
5. Are there any phrases in the material that you find confusing or hard to understand?
 - a. Moderator: point to each phrase and ask: in your own words, what does this mean to you?
 - b. Are there any words that are unfamiliar or you don't understand?
 - i. If yes, which word would you use instead?
6. How could this material be changed to be more appealing or easier to understand?
 - a. Is the size of the text large enough to be read from a distance?
 - b. What do you think about the size of the images?
 - c. What do you think about the colors used?
 - d. What do you think about the music?
 - e. Is there too little/enough/too much information?
7. What are the actions that this video is recommending you take?
 - a. Would you act on any of these recommendations? Why or why not?
 - b. (Probe If not motivated to act) I don't think it's important, I don't have illness in video, I don't have time, I don't have a way to pay for it, I'm afraid, I would be embarrassed, I don't trust this item, I wouldn't know how to [do the actions outlined], other.
 - c. Are there any recommendations from this storyboard of the video that you cannot do? If yes, why?
 - d. Are there any recommendations from this storyboard of the video that you will not do? If yes, why?
 - e. Do you agree with these recommendations?
8. After looking at these storyboards of potential videos, is there any other information about travelers' diarrhea that you think should be included?
9. Did you learn anything new from these storyboard videos? If so, what?

Closing**5 minutes (≤10 minutes)**

This concludes our discussion. Is there anything we have not discussed today that you would like to mention? Do you have any additional questions that you would like answered? Thank you for participating.

Citation

Angelo, K., Haulman, N. J., Terry, A. C., Leung, D. T., Chen, L. H., Barnett, E. D., Hagmann, S. H., Hynes, N.

A., Connor, B. A., Anderson, S., McCarthy, A., Shaw, M., Van Genderen, P. J., & Hamer, D. H.

Illness among US resident student travellers after return to the USA: a GeoSentinel analysis, 2007–17. *Journal of Travel Medicine*, Volume 25, Issue 1, 1 January 2018, <https://doi.org/10.1093/jtm/tay074>.

APPENDIX C

Discussion Guide for Message Testing (Post)

Message Testing Materials for Post-Travel Study Abroad Students **Introduction** **10 minutes**

My name is _____ and I am with the College of Public Health. I am here today as a DrPH student to get your opinion about food and water safety, travel risks, and social media storyboard videos. These storyboards are concepts of videos that are similar to videos that will be developed. Hearing your reaction to them will help us make changes to improve our videos. Your opinions are really important to us—you are the expert audience—and so we really want you to share your honest thoughts. Today’s discussion will help public health professionals improve health education and communication materials for you and other study abroad students, and so your participation can help the people you care about. First, let’s discuss how things will work during today’s group.

- Privacy
 - Full names will not be used, and we will not keep any written record of your names nor will anyone besides researchers have access to any information collected today.
- Audio recording and observers/note taker
 - We will be using audio recorders to record today’s discussion which will help us remember what you say since there will be a lot of information discussed and we won’t be able to write everything down. Also, in the back of the room there is someone taking notes on the discussion which will also help us remember what you say.
 - If you are worried about your privacy, you can use a different name during the discussion.
- We want your honest opinions
 - Again, the main goal today is to get your opinions about food and water safety and a few storyboard videos, so we can make videos easier to understand by students. So, please do not hesitate to point out things that you don’t like or don’t understand.
- Ground rules
 - Please allow everyone a chance to voice their own opinions, even if it is different than your own. We want to hear what all of you have to say.
 - It is very important that the information shared today stays private. This means that everything that is said does not leave the room.
 - I will also ask “why” a lot because I am very interested in your opinions.
- During the discussion, please feel free to ask any questions.

Do you have any questions about what are we doing here today or anything I have said so far?

Note for moderator: if participants ask questions about travelers' diarrhea, tell them to please wait until we are done and we will try to answer them as best as we can. However, refer them to a health provider for any clinical questions.

Five Minute Survey:

Before we get started with our discussion, I would like to fill out this brief survey about your demographics and social media. Once you have completed the survey, flip it over on the table and we will collect your paper.

1	Date of Birth (mm/dd/yyyy)	_____ / _____ / _____
2	Sex (Source: BRFSS)	<input type="checkbox"/> Male <input type="checkbox"/> Female
3	Are you Hispanic or Latino? (Source: BRFSS)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure
4	What is your race? Do you consider yourself... (Select one or more.)	<input type="checkbox"/> White <input type="checkbox"/> Black or African American <input type="checkbox"/> Asian <input type="checkbox"/> Native Hawaiian or other Pacific Islander <input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Other
5	Are you an active social media user?	<input type="checkbox"/> Yes <input type="checkbox"/> No
6	What platform do you use? (Select one or more.)	<input type="checkbox"/> Blogs <input type="checkbox"/> Facebook <input type="checkbox"/> Instagram <input type="checkbox"/> Pinterest <input type="checkbox"/> Snapchat <input type="checkbox"/> Twitter <input type="checkbox"/> YouTube
7	Which platform do you engage with daily (like, share, retweet, repost, comment)? (Select all that apply.)	<input type="checkbox"/> Blogs <input type="checkbox"/> Facebook <input type="checkbox"/> Instagram <input type="checkbox"/> Pinterest <input type="checkbox"/> Snapchat <input type="checkbox"/> Twitter <input type="checkbox"/> YouTube
8	Which platform do you use the most?	<input type="checkbox"/> Blogs <input type="checkbox"/> Facebook <input type="checkbox"/> Instagram <input type="checkbox"/> Pinterest <input type="checkbox"/> Snapchat <input type="checkbox"/> Twitter <input type="checkbox"/> YouTube

9	I would like to explore strange places	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
10	I get restless when I spend too much time at home.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
11	I like to do frightening things	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
12	I like wild parties.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
13	I would like to take off on a trip with no pre-planned routes or timelines.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
14	I prefer friends who are excitingly unpredictable.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
15	I would like to try bungee jumping.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
16	I like new and exciting experiences, even if I have to break the rules	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree

Warm-Up:

Let's go around the room. Please say your first name, the country where you would like to study abroad. **During this focus group I will be asking you questions about your interest in studying abroad. I will also ask you questions on food and water safety precautions to prevent travelers' diarrhea when you study abroad. To start some conversation, I would like for you to think of all the ways or phrases to say diarrhea?** For example, Poop, or the runs. Feel free to say bad words, catchy phrases, or even write it in a different language. See how many ways you can say it and write it down on your sticky notes.
Moderator (5min) – call out what is written on white board.

Warm-up on Awareness and Knowledge about Travelers Health 10 minutes (≤20 minutes)

Traveling abroad

1. We would like to begin by talking about traveling. Why did you want to study abroad?
 - a. What type of experience were you looking for?
2. Before your study abroad program, had you traveled abroad before?
 - a. Was your previous abroad experience with family or friends or by yourself?

Healthy Travel Preparation

8. In terms of health, what health issues were you worried about before you went abroad?
9. What did you do before you went on your trip to help you prepare?
10. What are some precautions you are aware of that you took to avoid these risks?
11. What health information did you hear about that helped you prepare for your trip?

Perceived Risk (Extended Parallel Processing Model)

We would like to begin by talking about travelers' diarrhea. Did you know that 70% of students who studied abroad got travelers' diarrhea (Angelo et al., 2018)?

12. *How many of you had travelers' diarrhea while studying abroad?*
 - a. What did you do to relieve your symptoms?
 - b. Did it keep you from learning? Or keep you from doing activities you wanted to do?
 - c. What health training did you receive in regards to preventing travelers' diarrhea?
 - d. What health training did you ignore? Why?
 - e. How much did you think about food and water safety while you were there?

Perceived severity

13. For those who did not have travelers' diarrhea, how serious do you think the consequences are if you were to have travelers' diarrhea?
14. For those who had travelers' diarrhea, how serious were the consequences when you had travelers' diarrhea?

Perceived susceptibility

15. What do you think your likelihood was of getting travelers' diarrhea?
16. What factors do you think effect the likelihood that you would get travelers' diarrhea abroad if you were to go again?

Preparation for Travelers' Diarrhea

17. What did you do before you went on your trip that prepared you for travelers' diarrhea?
 - c. What information did you hear about for what you should do if you have signs/symptoms of travelers' diarrhea?
 - d. What information did you hear about on things that cause travelers' diarrhea?
 - e. Did you follow that information? Why? Why not?
18. What is it that you wish you would have known before you went on your trip?
 - a. What would have made you take the information more seriously?

Perceived Efficacy (Extended Parallel Processing Model)

Response efficacy

19. How effective were these solutions at preventing travelers' diarrhea?
 - a. Food and Beverage Selection (CDC Yellow Book): Careful selection of food and beverage when indulging in the local cuisine.
 - i. Eat only food that has been fully cooked and served hot.
 - ii. Do not eat fresh vegetables or fruits unless you can peel them yourself.
 - iii. Drink only bottled, sealed beverages, and avoid ice—it was likely made with tap water.

Self-efficacy

20. How confident were you that you could successfully practice the proposed solution?
 - b. Eat only food that has been fully cooked and served hot.
 - c. Do not eat fresh vegetables or fruits unless you can peel them yourself.
 - d. Drink only bottled, sealed beverages, and avoid ice—it was likely made with tap water.

Modalities for Health Education

21. How do you prefer to get your health information? Why do you say that?
 - c. Probe: from friends, family, a health provider, radio, etc.
 - d. Do you like getting health information from social media? Why or why not?

Message Testing

30 minutes (\leq 40 minutes)

10. EFFICACY - I'm going to pass around a sheet that gives you some descriptions for [INSERT health topic or behavior]. Please review these descriptions silently, and circle those that seem most doable. Cross out any that don't seem do-able.
 - a. After all tactics have been discussed, the moderator asks participants to identify the two or three tactics that they think are most important and that they have the greatest likelihood of doing. (Moderator takes hand count.)
 - b. From the two or three top tactics, the participants are asked to choose the single tactic that they think is most important and that they have the greatest likelihood of implementing. The moderator explores some of the participants' choices and their reasons for choosing. Moderator asks "Why"

- c. As you look at these strategies, does any one of the three stand out as the one that you would try first? Which one? Why?
- d. What are the one or two things we have discussed today — if any — that seem most feasible to implement in your household?
- e. Is there any more information or tools that you would need that would help you implement some of these strategies?
- f. What are some of the things that would make it difficult for people who are studying abroad to prevent travelers diarrhea?
- g. What could, or has, been done in while you studied abroad to make it easier to overcome some of the barriers you described?

Moderator Instructions: Now, I'm going to show you a few storyboards. These storyboards will be potentially going on Instagram as a video. *Show storyboard examples in PowerPoint for potential video messages and proceed through the questions below.*
Show Storyboard 3 first, then Storyboard 2, and Storyboard 1

- 11. How would you sum up in just a few words your first thoughts about this storyboard #1, 2, and 3?
 - a. What do you like about the storyboard?
 - b. Is there anything you do not like? If so, what?
- 12. In your own words, what do you think are the most important ideas in the storyboard? Why do you say that?
- 13. What do you think about the images used in the storyboard?
 - a. Moderator: point to each of the images and ask: what does this image tell you?
 - b. Are any of the pictures confusing or hard to understand? Which ones? Any others?
 - c. If confusing, what other pictures would you use?
 - d. Are there any images that you don't like? Which? Why?
 - e. Are there any images that offend you? Which? Why?
 - f. How would you change the storyboard to make the video better?
- 14. Are there any phrases in the material that you find confusing or hard to understand?
 - a. Moderator: point to each phrase and ask: in your own words, what does this mean to you?
 - b. Are there any words that are unfamiliar or you don't understand?
 - i. If yes, which word would you use instead?
- 15. How could this material be changed to be more appealing or easier to understand?
 - a. Is the size of the text large enough to be read from a distance?
 - b. What do you think about the size of the images?
 - c. What do you think about the colors used?
 - d. ~~What do you think about the music?~~
 - e. Is there too little/enough/too much information?
- 16. What are the actions that this video is recommending you take?

- a. Would you act on any of these recommendations? Why or why not?
 - b. (Probe If not motivated to act) I don't think it's important, I don't have illness in video, I don't have time, I don't have a way to pay for it, I'm afraid, I would be embarrassed, I don't trust this item, I wouldn't know how to [do the actions outlined], other.
 - c. Are there any recommendations from this storyboard of the video that you cannot do? If yes, why?
 - d. Are there any recommendations from this storyboard of the video that you will not do? If yes, why?
 - e. Do you agree with these recommendations?
17. After looking at this storyboard of the video, is there any other information about travelers' diarrhea that you think should be included?
18. Did you learn anything new from this storyboard video? If so, what?
19. How much would you trust info about travelers' diarrhea with some of the messages that you read on your Instagram feed from the sources that you follow? What sources would you trust from your Instagram feed if you saw a message like this?

Closing

5 minutes (≤10 minutes)

This concludes our discussion. Is there anything we have not discussed today that you would like to mention?

Do you have any additional questions that you would like answered?

Thank you for participating.

Citation

Angelo, K., Haulman, N. J., Terry, A. C., Leung, D. T., Chen, L. H., Barnett, E. D., Hagmann, S. H., Hynes, N.

A., Connor, B. A., Anderson, S., McCarthy, A., Shaw, M., Van Genderen, P. J., & Hamer, D. H.

Illness among US resident student travellers after return to the USA: a GeoSentinel analysis, 2007–17. *Journal of Travel Medicine*, Volume 25, Issue 1, 1 January 2018, <https://doi.org/10.1093/jtm/tay074>.

APPENDIX D

Focus Group Discussion Activity

Choose foods and beverages carefully to lower your risk of diarrhea

1. Eat only food that has been fully cooked and served hot.
2. Do not eat fresh vegetables or fruits unless you can peel them yourself.
3. Drink only bottled, sealed beverages, and avoid ice—it was likely made with tap water.

APPENDIX E

Focus Group Questions

1	Date of Birth (mm/dd/yyyy)	_____ / _____ / _____
2	Sex (Source: BRFSS)	<input type="checkbox"/> Male <input type="checkbox"/> Female
3	Are you Hispanic or Latino? (Source: BRFSS)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know/not sure
4	What is your race? Do you consider yourself... (Select one or more.)	<input type="checkbox"/> White <input type="checkbox"/> Black or African American <input type="checkbox"/> Asian <input type="checkbox"/> Native Hawaiian or other Pacific Islander <input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Other

5	Are you an active social media user?	<input type="checkbox"/> Yes <input type="checkbox"/> No
6	What platform do you use? (Select one or more.)	<input type="checkbox"/> Blogs <input type="checkbox"/> Facebook <input type="checkbox"/> Instagram <input type="checkbox"/> Pinterest <input type="checkbox"/> Snapchat <input type="checkbox"/> Twitter <input type="checkbox"/> YouTube
7	Which platform do you engage with daily (like, share, retweet, repost, comment)? (Select all that apply.)	<input type="checkbox"/> Blogs <input type="checkbox"/> Facebook <input type="checkbox"/> Instagram <input type="checkbox"/> Pinterest <input type="checkbox"/> Snapchat <input type="checkbox"/> Twitter <input type="checkbox"/> YouTube
8	Which platform do you use the most?	<input type="checkbox"/> Blogs <input type="checkbox"/> Facebook <input type="checkbox"/> Instagram <input type="checkbox"/> Pinterest <input type="checkbox"/> Snapchat <input type="checkbox"/> Twitter <input type="checkbox"/> YouTube

Interest and Preference Questions:

9	I would like to explore strange places	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
10	I get restless when I spend too much time at home.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
11	I like to do frightening things	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
12	I like wild parties.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
13	I would like to take off on a trip with no pre-planned routes or timelines.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
14	I prefer friends who are excitingly unpredictable.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
15	I would like to try bungee jumping.	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
16	I like new and exciting experiences, even if I have to break the rules	<input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neither Agree Nor Disagree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree

APPENDIX F

Consent Form

UNIVERSITY OF GEORGIA
CONSENT FORM – Focus Groups (Pre-travel and Post-travel)
Use of Social Media Messaging to Motivate Study Abroad Students to Adopt Safe Food and Water
Precautions During Travel

Researcher's Statement

We are asking you to take part in a research study. Before you decide to participate in this study, it is important that you understand why the research is being done and what it will involve. This form is designed to give you the information about the study so you can decide whether to be in the study or not. Please take the time to read the following information carefully. Please ask the researcher if there is anything that is not clear or if you need more information. When all your questions have been answered, you can decide if you want to be in the study or not. This process is called “informed consent.” A copy of this form will be given to you.

Principal Investigator: Joel Lee

College of Public Health
joellee@uga.edu

Purpose of the Study

Student travelers may be at risk for travel-related illnesses or injuries such as travelers' diarrhea. This study will look at how to effectively create and deliver a behavior change message strategy through social media to students. You are being asked to participate in the study because you are a UGA student interested in studying abroad or because you have studied abroad in the past two years.

Study Procedures

If you agree to participate in the focus group session, you will be asked to provide your opinion about food and water safety, travel risks, and social media storyboard videos. These storyboards are concepts of videos that are similar to videos that will be developed. Hearing your reaction to them will help us make changes to improve our videos. Your opinions are really important to us—you are the expert audience—and so we really want you to share your honest thoughts.

The focus group session will be an hour to an hour and a half long. You will be asked questions about your demographics and social media use in a survey before the start of the focus group session. Once all participants have completed the survey, the focus group session will begin.

During the focus group session, you will have the opportunity to answer questions about food and water safety and will see a few storyboard ideas. We will ask you for your thoughts on the video storyboards. This will help us make the videos easier to understand by students like you.

Risks and discomforts

- *We do not anticipate any risks from participating in this research.*

Benefits

- *The focus group discussion will help us improve health education and communication materials for you and your study abroad friends, and so your participation could help the people you care about.*

Alternatives

N/A

Incentives for participation

- *Participants will be compensated \$10 for their participation, time, and travel. Participants will also receive pizza during the focus group session.*

Audio/Video Recording

We will be using audio recorders to record the focus group session. This will help us remember what you say since there will be a lot of information discussed and we won't be able to write everything down. Also, in the back of the room there will be someone taking notes on the discussion which will also help us remember what you say. If you are worried about your privacy, you can use a different name during the discussion. Upon completion of the research, all recordings will be destroyed after one year.

Please provide initials below if you agree to have this interview (*audio*) recorded or not. You may still participate in this study even if you are not willing to have the interview recorded.

_____ I do not want to have this interview recorded.
 _____ I am willing to have this interview recorded.

Privacy/Confidentiality

Full names will not be used, and we will not keep any written record of your names nor will anyone besides researchers have access to any information collected during the focus group session. We will ask for your email in case we need to contact you for a follow up discussion.

We will make every effort to protect your confidentiality. However, our ability to protect your confidentiality after you participate in the focus group is limited, since we will not be able to monitor what other participants may choose to share to others about the focus group session.

Taking part is voluntary

Your involvement in the study is voluntary, and you may choose not to participate or to stop at any time without penalty or loss of benefits to which you are otherwise entitled.

If you decide to stop or withdraw from the study, the information/data collected from or about you up to the point of your withdrawal will be kept as part of the study and may continue to be analyzed.

If you have questions

The main researcher conducting this study is Joel Lee, a professor, and Leticia Bligh, a DrPH student in the College of Public Health at the University of Georgia. Please ask any questions you have now. If you have questions later, you may contact Joel Lee at joellee@uga.edu or at 706.542.3709. If you have any questions or concerns regarding your rights as a research participant in this study, you may contact the Institutional Review Board (IRB) Chairperson at 706.542.3199 or irb@uga.edu.

Research Subject's Consent to Participate in Research:

To voluntarily agree to take part in this study, you must sign on the line below. Your signature below indicates that you have read or had read to you this entire consent form, and have had all of your questions answered.

 Name of Researcher

 Signature

 Date

 Name of Participant


 Signature

 Date

Please sign both copies, keep one and return one to the researcher.

APPENDIX G

Recruitment Flyer



Interested in Studying Abroad or Recently Returned?

We are seeking volunteers to participate in a paid focus group.

Go here to learn more

https://ugeorgia.ca1.qualtrics.com/jfe/form/SV_ey737UeCmx7wxyR

- Qualified participants must:
 - Be 18-24 years old
 - Be interested in studying abroad or recently returned (within last 2 yrs) from studying abroad
 - Additional criteria may apply
- Qualified participants receive:
 - Focus group session compensation of \$10 for time and travel
 - Pizza during session

APPENDIX H

Study Abroad Focus Group

Study Abroad Focus Group

Start of Block: Default Question Block

Q4 Thank you for your interest. By clicking next, you agree to being a part of this study. The next set of questions are screening questions for the focus group. This will take you less than one minute to complete. Your answers will determine your eligibility for the focus group.

If you qualify, you will be prompted to enter your email address. The researcher will contact you via email to schedule the focus group. You will receive an incentive payment of \$10 only if you are selected as a participant and participate in the focus group session.

If you have any questions you may contact IRBStudy00006876@gmail.com.

Thank you!

Q1 Are you 18 to 24 years old?

☐ Yes (1)

☐ No (2)

Skip To: Q6 If Are you 18 to 24 years old? = No

Q2 Are you enrolled at UGA?

☐ Yes (1)

☐ No (2)

Skip To: Q6 If Are you enrolled at UGA? = No

Q3 Are you interested in studying abroad or have you recently returned (within the last 2 years) from studying abroad?

☐ Yes (1)

☐ No (2)

Skip To: Q6 If Are you interested in studying abroad or have you recently returned (within the last 2 years) fro... = No

Skip To: Q7 If Are you interested in studying abroad or have you recently returned (within the last 2 years) fro... = Yes

Q6 Thank you so much for your interest. Unfortunately, you are ineligible for our focus group.
We appreciate your interest.

Thank you!

*Skip To: End of Survey If Thank you so much for your interest. Unfortunately, you are ineligible for our focus group.
We ap...() Is Displayed*

Q7 Congratulations! You are eligible to participate in a study abroad focus group. Qualified participants who complete one focus group session will receive \$10 for their time and travel. Pizza will also be served during the session.

To sign up for a focus group session, go
to https://ugeorgia.ca1.qualtrics.com/jfe/form/SV_03xRDdPKb8fZXxj

Thank you!

End of Block: Default Question Block

APPENDIX I

Scheduling Focus Group Session

Scheduling Focus Group Session

Start of Block: Default Question Block

Q3 Congratulations! You are eligible to participate in the study abroad focus group. Please enter your email and the researcher will be in touch within 24 hours to schedule your focus group session. If you have any questions, you may contact the researcher at IRBStudy00006876@gmail.com.

Thank you!

Q4 Enter your email

End of Block: Default Question Block
