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COLLEGE STUDENT LAY HEALTH INFORMATION MEDIARY BEHAVIOR:

AN EXAMINATION OF EHEALTH LITERACY AND

UNREQUESTED HEALTH ADVICE

by

Andrew William Cole

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ABSTRACT
COLLEGE STUDENT LAY HEALTH INFORMATION MEDIARY BEHAVIOR:
AN EXAMINATION OF EHEALTH LITERACY AND
UNREQUESTED HEALTH ADVICE

by

Andrew William Cole

The University of Wisconsin-Milwaukee, 2014
Under the Supervision of Professor Mike Allen, Ph.D.

Lay health information mediary behavior (LHIMB) describes individuals seeking health information to relay to others. The current study examines LHIMB as a relationship between eHealth literacy and unrequested health advice (UHA). 254 undergraduate students completed a survey addressing eHealth literacy levels, general UHA behaviors and specific UHA episodes. Results on general UHA behaviors indicate no significant relationship exists between eHealth literacy and utilizing UHA in health decision-making or frequency of offering UHA. However, self-perceived health status and degree of health worry significantly predict using UHA in health decision-making. Further, as health worry increases, participants appear significantly more likely to receive and offer UHA. Results on specific UHA episodes suggest the majority of UHA occurs within close relationships. Rather than utilizing Internet sources, the majority of UHA employs personal experience as the primary health information source. Though the quality and reliability of online health information may not presently represent a significant concern to college student health, future research should further examine the observed partiality shown toward personal experience and student reliance on lay health sources demonstrated in the current study.

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College Student Lay Health Information Mediary Behavior:

An Examination of eHealth Literacy and Unrequested Health Advice

The notion of "lay health information mediary behavior" (LHIMB) describes individuals seeking health information for others (Abrahamson, Fisher, Turner, Durrance & Turner, 2008). Individuals often engage in LHIMB without explicit request from another individual (Abrahamson et al., 2008). Recent survey findings by the Pew Internet and American Life Project suggest 39% of Internet users specifically search for health information about another person online (Fox & Duggan, 2013). LHIMB represents an application of several commonly researched constructs, including health information seeking and social support. Informal circulation of lay health information is not a new phenomenon (i.e., "Old Wives' Tales"). However, increased access to the Internet provides more individuals with the opportunity to find and share health information originating from a variety of online health information sources.

Individuals engaged in LHIMB provide health information to other individuals. Similarly, advice provides information intended to assist another individual. Individuals able to find and evaluate health information available online may provide advice to others more often. Other individuals may therefore come to view these health mediaries as lay health experts (Abrahamson et al., 2008). Therefore, the current study examines college student LHIMB as a function of online health information literacy (eHealth literacy) and unrequested health advice (UHA). Though many individuals may seek advice from perceived lay health experts, when support givers offer directive social support, such as advice, without solicitation, support receivers may react in ways inconsistent with the support message content. Many support receivers perceive UHA as intrusive, face

threatening, and uncomfortable (Boutin-Foster, 2005; Chentsova-Dutton & Vaughn, 2012; Smith & Goodnow, 1999). As LHIMB and UHA appear communicatively similar, support receivers may not act on the health information received through unrequested advice regardless of the quality of information.

The following sections provide an overview on several significant components related to LHIMB: health information seeking behavior (HISB), eHealth literacy, social support, and advice. A brief review on health information seeking, including discussion on the nature of health information and eHealth literacy, is first provided. Discussion then turns toward social support, specifically the relationship between unsolicited social support (USS) and advice. Previous research on advice and facework is detailed. The rationale and research methods for the current study are provided. Finally, study results, a discussion of the study findings and implications, as well as potential avenues for future research are detailed.

Health Information Seeking

LHIMB describes health information seeking behaviors (HISB) focused on another person's health. Therefore, a brief overview on health information seeking is useful in understanding the connection between online health information and eHealth literacy. During the 1980s scholars across information science, medicine and the social sciences took an interest in HISB. Different construct operationalization, depending on research focus, lead to inconsistencies in descriptions of HISB. Lambert and Loiselle (2007) attempted to develop a definition of HISB through a conceptual analysis of the scholarly application of the construct. The researchers conducted a content analysis on five books and 100 scholarly articles addressing information seeking behavior, health

information, and health education published between the years of 1982 and 2006. The researchers' content analysis revealed a number of useful commonalities. Commonalities across the literature included the existence of perceived threats to health and wellbeing as motivation to seek health information, a focus on individual participation in the health decision-making process, and behavioral changes made as a result of health information analysis and evaluation. Therefore, based on Lambert and Loiselle's findings, the current study considers HISB as an active process where individuals search out and evaluate health information for use in health decision-making. In relation to LHIMB, HISB concerns finding and evaluating health information to then offer other individuals.

Previous empirical research indicates a relationship exists between individuals' prior health knowledge and HISB. Empirical evidence suggests individuals previously conversant in particular health issues are more apt to seek out further information on the topic than less knowledgeable individuals. Dutta-Bergman (2005a) describes individuals actively engaged in health matters and practicing healthy behaviors as "health-oriented." Some individuals appear more health-oriented than others, though Dutta-Bergman suggests community influence may increase individual health orientation. Health-oriented individuals appear more actively engaged in seeking health information across many channels and sources. Many potential health information sources represent lay sources (Boneham & Sixsmith, 2006; Ford & Kaphingst, 2009; Kivits, 2004). Due to higher engagement with health information across various channels and sources, health-oriented individuals may receive much health information from lay sources. If such individuals pass on the information they receive to others, they become lay health information sources as well (e.g., a lay health mediary).

Lay Health Information

Lay health information describes health information offered by individuals and sources outside professional, medical channels. Health information circulates through online and offline channels (Cotton & Gupta, 2004; Dutta-Bergman, 2004b). Similarly, lay health sources offering information not directly representing professional medical conclusions appear online and offline. Lay health information does not, by definition, represent low quality information. Recently, some health organizations have begun using "lay health workers" to assist in reaching individuals who might otherwise not have access to health care (Small et al., 2013). Despite expanding use of lay sources in the professional health context, lay health information sources most often include close personal relationships, community organizations, and support groups. In addition to pre-existing offline relationships, organizations and support groups, a plethora of different online communities and health forums offer lay health information. Often the content of lay health information originates through individuals' personal experience (Boneham & Sixsmith, 2006; Kivits, 2004).

Whether online or offline, close personal relationships and community connections appear as primary lay health information sources. In one study, Dutta-Bergman (2004b) found health-oriented individuals received the majority of health information utilized in health decision-making from established close personal relationships. Previous empirical research further supports the notion that health information utilized in general health decision-making originates in interactions with close others (Ford & Kaphingst, 2009; Percheski & Hargittai, 2011; Tardy & Hale, 1998). In a study of community influence on health information, Ford and Kaphingst's

(2009) found 51% of participants frequently received health information from family members and friends. Additionally, they found 40% of individuals received health information from non-professional/medical, community organizations. Community organizations and close personal relationships appear significant sources of lay health information.

Much extant research on lay health information focuses on nonprofessional "experts," with demonstrated knowledge (e.g., personal experience) on a particular health topic. Lay health experts include mothers offering pregnancy advice (Dunn, Pirie & Hellerstedt, 2004) and individuals living with HIV or AIDS offering advice to the newly diagnosed (Brashers, Neidig & Goldsmith, 2004). Previous research suggests many individuals seeking health information about a particular condition prefer interacting with lay health experts, those individuals with personal experience with the particular condition, to medical personnel (Frohlich & Zmyslinski-Seelig, 2012). Early research into lay health experts examined the use of "lay therapists," formally patients themselves, in hospital group therapy sessions (Verinis, 1970). Contrary to researcher expectations that individuals in group therapy sessions would not accept lay therapists as experts, the group therapy patients evaluated the lay therapists very highly. A follow up survey with the group therapy patients revealed evidence of a bond between patients and lay therapists, resultant from the lay therapists' personal experiences in similar situations. Such a bond created through shared experience may result in valuing lay health experts as trustworthy health information sources.

Utilizing lay health information does not necessarily result in lessened use of professional health and medical resources in health decision-making. An individual's

health orientation appears nurtured by close personal relationships (Dutta-Bergman, 2004b). However, receiving health information from close others does not appear to prevent health-oriented individuals from seeking out further health information from other sources. Individuals receiving information through community connections are more likely to seek out further health information in other channels as well (Dutta-Bergman, 2004b). Previous research findings provide evidence for a circular pattern where health focused community connections encourages individual health information seeking behaviors, with individuals relaying the new information back to the community (Dutta-Bergman, 2004b; 2005b). More recently, the Internet provides a primary source of health information for many individuals (Lloyd et al., 2013; Percheski & Hargittai, 2011). While interpersonal relationships appear prevalent as health information sources, much lay health information exists online. Concerns about the quality and validity of online health information led to characterization of eHealth literacy as a means to evaluate the relationship between individuals and online health information.

Online Health Information and eHealth Literacy

Online health information addresses a vast array of health and wellness issues. Online health information topics range from relatively minor issues, such as basic nutrition and healthy eating advice, (McKinley & Wright, 2014) to serious health and wellness issues, such as advice for coping with serious, chronic ailments (Magnezi, Bergman & Grosberg, 2014; Xiao, Sharman, Rao, & Upadhyaya, 2014). Online health information sources range widely, from websites maintained by professional health organizations such as the Mayo Clinic and National Institute of Health, to online health discussion forums (Hajil, Sims, Featherman & Love 2014), and personal videos uploaded

to websites such as YouTube (Frohlich & Zmyslinski-Seelig, 2012). Extant research on online health information and applications of social support primarily focuses on serious health and wellness issues such as chronic health conditions and terminal illness. To date, little research addresses the relationship among more generalized health information, measures of well-being, and social support.

As previously discussed, health-oriented individuals seek health information through a variety of channels, with much health information circulating through close relationships. Previous research suggests individuals utilize health information gained from the Internet to compliment health information received from offline sources (Ruppel & Rains, 2012). However, evidence exists that many individuals turn to online health information as a primary means of health information. Individuals in rural areas, individuals suffering from stigmatized illnesses, and those dissatisfied by previous experiences with traditional health care providers, may turn to online health information as a primary means of health information (Atkinson et al., 2009; Berger et al., 2005; Ivanitskaya O'Boyle, & Casey, 2006; Tustin, 2010).

The vast amount of health information available online, as well as the wide range of extant sources, poises several potential issues. Evidence exists for a "digital divide" preventing many individuals from accessing potentially helpful health information available online (Cotton & Gupta, 2004; Hargittai, 2010; Neter & Brainin, 2012). Further, many individuals perceive vastly differing online health information sources as equally credible (Ivanitskaya et al., 2006; Kwan et al., 2010; Morahan-Martin, 2004). Despite the lack of a demonstrated relationship between search engine results and the credibility of health information, previous research suggests most individuals assume the

first results found through an online search are the most credible sites, regardless of the accuracy of the content (Buhi, Daley, Fuhrmann, & Smith 2009; Crespo, 2004; McTavish, Harris, & Wathen, 2011; Morahan-Martin, 2004). With the vast variety of sources online providing health information, much potential exists for misleading information to circulate (Cozma, 2009; Lewis, 2006; Pant et al., 2012; White & Horvitz, 2009). Therefore, online health information literacy, or eHealth literacy, comprises a necessary component in better understanding individuals' relationships with online health information. To develop eHealth literacy, information seekers need to critically analyze and evaluate online health information.

The abundance of health information available in different forms online raises concerns over whether online health information seekers find trustworthy health information (Hajil et al., 2014; Lederman, Fan, Smith & Chang, 2014; Morahan-Martin, 2004; Pant et al., 2012). Many online health information seekers may not trust sources generally perceived as more sound while privileging sources with questionable credibility (Morahan-Martin, 2004). An author's title (e.g., MD, PhD) or institutional affiliation (e.g., CDC, Mayo Clinic) does not alone seem to make online health information appear credible to online health information seekers (Dutta-Bergman, 2004a). Conversely, some popular online health information sources lack the support of, and may even contradict, guidelines suggested by medical professionals and organizations (Pant et al., 2012; Morahan-Martin, 2004).

As essentially anybody can offer health information and health advice online to a potentially vast audience, more lay health information sources may be available online than offline. Many online health information websites offer lay health advice based on

personal experience (Pant et al., 2012). Lay health information appears in several modes online including through circulation of health-related articles and information on social media sites such as Facebook and Twitter, blogs and YouTube videos (Frohlich & Zmyslinski-Seelig, 2012; Oh et al., 2013; Pant et al., 2012; Rains & Keating, 2011; Scanfeld, Scanfeld & Larson, 2010). As lay individuals and health professionals have equal access to the same modes online, credibility of online health information varies, even within the same type of source (e.g., personal versus professional blogs) (Buhi et al., 2009; Buis & Carpenter, 2009; Dutta-Bergman, 2004a; 2005b). Additionally, online communities and support groups offer health information, emotional support and health advice (Nambisan, 2011; Oprescu et al., 2013; Wright & Bell, 2003). Health information based on personal experience may provide an individual with support, but does not represent personalized professional health information tailored for the individual. Without ability to critically analyze one's relationship to received health information, much online health information utilized in health decision-making may not adequately serve an individual's own specific health needs.

Online health information seekers must even critically evaluate health information received from professional, and credible, online health sources. Previous empirical research suggests websites maintained by professional health organizations, such as WebMD and the Mayo Clinic, offer potentially misleading information in the form of "symptom-checkers" (White & Horovitz, 2009). Many professional health sites offer symptom-checkers allowing visitors to input symptoms and receive a list of potential ailments. Symptom-checker results, however, may over-represent serious illness incidence rates in the general population. For example, White & Horvitz (2009) utilized

the search feature on a professional medical site to find information on "muscle twitches." The researchers found information on ALS in 10% of results. Though ALS appeared more highly represented in a general search engine search than on the professional medical sites, probability for ALS diagnosis in the general population is .00186%. Therefore, through over representation of the likelihood that ambiguous symptoms represent severe ailments, information received from professional medical websites may foster an impression of increased probability that muscle twitches signify ALS. For individuals already worried about personal health, or the health of a close other, search result findings including relatively rare, but frightening diseases, may increase health worry (Baumgartner & Hartmann, 2011; Fergus, 2013).

Without the ability to evaluate health information found online, many individuals may self-diagnose an inaccurate condition based on symptoms. Previous health knowledge appears related to accurate online health information usage. Hu and Haake (2010) examined the relationship between self-diagnosis accuracy and online health information use. Participants were provided with a list of symptoms and asked to imagine a good friend experiencing the symptoms. Participants then received one potential diagnosis for the symptoms and were asked to rate the diagnosis accuracy. After initial rating, participants used online health sources to further determine if the provided diagnosis was a suitable fit for the symptoms. Following Internet research, participants again rated the accuracy of the potential diagnosis. Generally, participants appeared more accurate in assessing the diagnosis following the online search. However, prior knowledge on the particular health issue appeared as the strongest, positive predictor of diagnosis accuracy. The amount of time spent searching for information online

significantly and negatively predicted diagnosis accuracy. Based on Hu and Haake's findings, more health knowledgeable individuals appear better able to utilize and accurately apply online health information. Individuals with less knowledge about a particular health issue may be overwhelmed by the amount of information available online and less able to find and utilize credible and accurate sources.

The current study measures individuals' ability to critically analyze and evaluate online health information through self-reported eHealth literacy. Norman and Skinner (2006b) described eHealth literacy as a multidimensional combination of six competencies: "traditional literacy," "health literacy," "information literacy," "scientific literacy," "media literacy" and "computer literacy" (p. 2). An individual's eHealth literacy level reflects skills such as the ability to read and write, the ability to find and evaluate health information online, and to effectively apply health knowledge (McCray, 2005; Neter & Brainin, 2012; Norman & Skinner, 2006a). Recent scholarly discussion on eHealth literacy represents a change in focus on the relationship between individuals and health information. Promotion of eHealth literacy reconfigures patients, previously construed as passive and dependent on the knowledge of medical professionals, into more active and engaged health consumers (Dalrymple, Zach & Rogers, 2014; Norman & Skinner, 2006b).

LHIMB as Unsolicited Social Support

LHIMB represents a type of socially supportive communication. Much like health information circulation generally, LHIMB occurs often within close personal relationships such as family and friends (Abrahamson et al., 2008). Abrahamson et al. (2008) describe LHIMB as an "expression of caring" used to "maintain or strengthen

relationships or alleviate stress" (p. 318). Abrahamson et al.'s definition of LHIMB resembles scholarly descriptions of social support, commonly described as caring communication behaviors intended to enhance another's life through promoting wellness and coping abilities (Burleson, 1994; Cohen, Gottlieb & Underwood, 2000; Goldsmith, 2004; Gottlieb & Bergen, 2010; Sias & Bartoo, 2007).

Previous research often highlights the pro-social benefits of social support. However, no exact definition for social support persists across the literature. Definitional ambiguity in social support research results in an "umbrella construct" where wide ranges of nuanced communicative behaviors are broadly labeled as social support (Goldsmith, 2004). Nomenclature describing similar communication behaviors including supportive interactions (Burleson, 2009; Feng, 2009), comforting messages (Burleson, 1994) and comforting behaviors (Jones & Guerreo, 2001) often appear in social support research. Despite the ambiguity, commonalities across support literature exist. Support consistently appears in response to a problematic situation, or distressing event, in support receivers' lives. Distressful events represent perceived real or potential threats to support receivers' health and wellbeing (Jones & Guerreo, 2001). Much research into social support describes support as the means through which positive interpersonal relationships benefit health and wellbeing (Burleson, 1994; Cohen, Gottlieb, & Underwood, 2000; Goldsmith, 2004; Gottlieb & Bergen, 2010; Sarason & Sarason, 2009).

Vangelisti (2009) explains social support research traditionally uses some combination of sociological, psychological and communication perspectives. Sociological social support research tends to focus on group affiliation how support networks react to distressing events (Cohen & Wills, 1985; Ell, 1984; Song, Son, & Lin,

2011). Psychological social support research focuses on cognitive perceptions of received support and the perceived support available through support systems (Bolger, Zuckerman, & Kessler, 2000; Cohen & Wills, 1985; Gottlieb & Bergen, 2010; Sarason & Sarason, 2009). The communication perspective on social support conceives of support as a process of verbal and nonverbal communication behaviors intended to provide an individual with help (Goldsmith, 2004; Vangelisti, 2009).

The current study views social support, and LHIMB as a form of social support, as a communication process. Communication serves as the means through which individuals offer and receive support. Whether through receipt of comforting verbal and nonverbal messages, or perception that a particular individual would provide support if needed, communication is central to the support process. Goldsmith (2004) conceptualizes support as a symbolic and rhetorical communicative process of shared meaning between two or more individuals. The rhetorical nature of support concerns using rhetorical resources to address goals in supportive interactions. As support messages are situated within a larger social context, the support givers' goals vary (Goldsmith & MacGeorge, 2000). Advice givers offer messages tailored to perceived constraints in specific situations (Goldsmith & Fitch, 1997). Constraints include personal and structural matters including the nature of the relationship, shared meanings within the relationship, and properties of the surrounding environment and culture.

In addition to different perspectives on support, support researchers generally divide support into three distinct types: emotional support, informational support and tangible support (Dakof & Taylor, 1990; Goldsmith, 2004; Thoits, 2011). Emotional support consists of affirming, caring messages intended to make others feel better about a

situation. Empathetic listening reflects a form of emotional support. Informational

support consists of messages intended to offer knowledge and insight into the situation.

Advice represents a common form of informational support. Tangible support consists of

concrete provisions. Paying another individual's bills reflects tangible support. Across all

support types, the nature of the interpersonal relationships influences how support

receivers respond to support attempts (Goldsmith, 2004; Vangelisti, 2009).

Differing viewpoints held by support givers and support receivers influence

support reception. Burleson (2009) posits that four factors influence individuals'

reactions to support: the message, the source, the context, and the recipient. Not all

factors receive equal weight in every support episode. Individuals may find some support

messages from particular individuals appropriate and helpful in certain contexts but not in

other contexts (Vangelisti, 2009). Empirical evidence exists suggesting individuals prefer

different support types, as well as different support providers, depending on the particular

distressing event (Dakof & Taylor, 1990; Hobfoll, Nadler, & Leiberman, 1986; Johnson,

Hobfoll, & Zalcberg-Linetzy, 1993; Vangelisti, 2009). For some support receivers, the

degree of intimacy with support givers influences support satisfaction to a greater extent

than the elements of the distressing event (Hobfoll et al., 1986; Johnson et al., 1993).

Support message content impacts the reaction to efforts at support. Support

messages attempt to persuade individuals to feel better about a distressing event, and/or

to take a particular action (Chentsova-Dutton & Vaughn, 2012; Yaniv, 2004). Therefore,

support messages represent a form of social influence (Burleson, 2009; Collins, Percy,

Smith & Kruschke, 2011; Cullum, O'Grady, Sandoval, Armeli & Tennen, 2013; Thoits,

2011; Yaniv, 2004). Despite even the best intentions on the part of support givers,

support receivers do not always feel better following support episodes (Afifi, Afifi, Merrill, Denes, & Davis, 2013; Boutin-Foster, 2005; Hagedoorn et al., 2000; Holmstron, Burleson & Jones, 2005). Perception of low quality support, sometimes referred to as "cold comfort," may result in support dissatisfaction and dismissal of message content, even if utilizing information from the support would benefit the support receiver (Holmstrom et al., 2005).

Support satisfaction diminishes when support message content conflicts with receiver self-efficacy perceptions (Bolger & Amarel, 2007; Boutin-Foster, 2005). Uchida et al. (2008) conducted a study to test the benefits of emotional support on college students' health. Positive effects of social support were found for the independent culture, the European-American students, and the interdependent culture, the Asian students. However, the positive effect observed on European-American students vanished once self-esteem was controlled. The researchers suggest a "sense of inadequacy" brought about through unequivocally clear support episodes may negate potential support benefits (p. 750). More subtle support behaviors, so-called "invisible support," where support receivers do not perceive a support giver's actions as explicit support may enhance coping ability to a greater extent than receiving more recognizable support messages (Bolger & Amarel, 2007; Bolger et al., 2000).

Advice represents a form of informational support where advice givers offer information from previous knowledge to individuals perceived as needing such information (Goldsmith, 2004; MacGeorge et al., 2002). Advice messages contain information intended to assist another individual and/or change an individual's perspective on a situation (Goldsmith, 2004; Goldsmith & Dun, 1997; MacGeorge,

Lichtman & Pressey, 2002; Yaniv, 2004). Goldsmith (2004) contends advice is most effective when receivers consider advice appropriate for the particular issue. Further Goldsmith suggests for advice to be effective, the advice receiver must feel the message offers useful information and the delivery is responsive to conversational and relational dynamics. However, as with other support types, support receivers often perceive advice messages as containing covert implications other than the expressed informational content (Goldsmith, 2000; Goldsmith & Fitch, 1997). Directive advice may indirectly communicate dependency on the advice giver and a lack of efficacy on the advice receiver. Perception of underlying simultaneous messages questioning receiver efficacy present in advice may explain why support receivers often consider advice less satisfying than other support types (Feng, 2009; Goldsmith, 2004; Hagedoorn et al., 2000). However, often support receivers receiving advice "take care" of the individual offering the advice by discounting any negative personal impacts such as reduced perceptions of self-efficacy (Goldsmith, 2004; Smith & Goodnow, 1999).

Many support givers assume advice is appropriate for any given situation (Goldsmith, 2004). Feng (2009) suggests the popular assumption that those experiencing a distressing event are in need of advice is problematic. Empirical findings on support satisfaction suggest that even when support receivers are receptive to advice, they often prefer emotional support, like empathic listening, prior to more directive informational support such as advice (Feng, 2009; Feng & MacGeorge, 2006; Jones, 2004). Therefore, Feng contends advice offered after emotional support may be more satisfying since support receivers' perspectives on the particular issue have been validated prior to receiving advice. Conversely, Feng contends advice offered without any emotional

support or advice offered before emotional support appears less satisfying and effective.

Unlike emotional support, that privileges support receivers' thoughts and feelings on the

situation, informational support, such as advice, privileges support givers' knowledge.

When advice appears before or without emotional support, advice givers do not

acknowledge advice receivers' perspectives. Support episodes exclusively restricted to

advice only validate advice givers' knowledge and perspective on the situation.

Therefore, advice can imply support givers have more knowledge of support receivers'

personal situations than the support receivers themselves (Goldsmith & Fitch, 1997;

Mojaverian & Kim, 2013). Such problems may amplify when support receivers do not

desire or explicitly request support (Vangelisti, 2009).

Unsolicited Support and Unrequested Advice

Often individuals offer support without direct request from support receivers.

Support given without explicit invitation constitutes unsolicited social support (USS).

USS occurs when support providers offer supportive messages without a direct request

for support from a support receiver (Boutin-Foster, 2005; Kim, Sherman & Taylor, 2008;

Mojaverian & Kim, 2013; Smith & Goodnow, 1999). As LHIMB often occurs without

provocation, LHIMB constitutes a form of USS (Kim et al., 2008; Mojaverian & Kim,

2013; Smith & Goodnow, 1999). Previous research on USS indicates mixed results for

support receivers. Close others may be aware of distressing events the support receiver

has not mentioned and can approach the topic without solicitation by offering support

(Bolger & Amarel, 2007; Goldsmith, 2004). Thus, many support receivers accept USS as

helpful, particularly when experienced in a close relationship (Kim et al., 2008;

Mojaverian & Kim, 2013). However, many support receivers identify USS episodes as

unpleasant and a violation of privacy, particularly when health issues are involved (Boutin-Foster, 2005; Thoits, 2011; Thompson & O'Hair, 2008).

USS often makes support receivers feel worse, especially when self-efficacy already appears threatened by a threat to one's health (Boutin-Foster, 2005; Smith & Goodnow, 1999; Thompson & O'Hair, 2008). Previous research suggests supportive messages may communicate receiver incompetence in handling a distressing event (Bolger & Amarel, 2007; Hagedoorn et al., 2000; Uchida et al., 2008). Many individuals further perceive USS as communicating a perceived dependency on the support giver (Boutin-Foster, 2005; Smith & Goodnow, 1999). The distress resultant from threats to receiver competency implied by USS often leaves support receivers feeling more stressed after receiving health-related USS than prior to the support episode (Boutin-Foster, 2005; Thompson & O'Hair, 2008). Perceptions of implied messages in support messages may provide one reason USS negatively impacts support receivers.

Much USS research focuses on unrequested advice. Research into unrequested advice may be more widespread than other forms of USS because (1) advice occurs frequently (Goldsmith, 2004), and (2) support receivers often do not want advice, even when they desire support (Dakof & Taylor, 1990; Feng, 2009). Advice givers may over-estimate support receivers' need for advice and offer advice without solicitation. As a result, advice receivers often consider unrequested advice intrusive (Chentsova-Dutton & Vaughn, 2012; Goldsmith, 2000; Goldsmith & Fitch, 1997). Unrequested advice may even result in negative psychological effects. Boutin-Foster (2005) interviewed and surveyed patients recovering from acute coronary symptoms and found unrequested advice as one of the five most problematic themes the patients reported. Despite the

likely motive to provide support, offering UHA may instead unintentionally cause

negative outcomes for advice receivers such as feeling more stressed, less in control and

less validated (Boutin-Foster, 2005; Warner et al., 2011). The notions of face and

facework may offer an understanding as to why UHA often produces negative outcomes.

Facework

Potential threats to privacy and self-efficacy contained in UHA link much advice

research to the Goffman's (1967) articulation of face and facework. Goffman defines face

as "the positive social value a person effectively claims for himself by the line others

assume he has taken" (p. 5). Goffman then describes facework as "the actions taken by a

person to make whatever he [sic] is doing consistent with face" (p. 12). Essentially,

facework concerns how individuals utilize communication to maintain how they wish to

be perceived by other individuals (Brown & Levinson, 1987). The relationship between

advice and face has received much scholarly attention with much research conceiving of

advice as a face-threatening act (FTA) (Goldsmith & MacGeorge, 2000; MacGeorge,

Feng, Butler & Budarz, 2004).

Facework offers much potential in which to evaluate advice receivers' perceptions

of advice givers. Depending on the topic, advice receivers may perceive advice as more

face threatening when the advice giver is not a close other (Feng & MacGeorge, 2006).

Further, individuals receiving unrequested advice often feel the need to "take care" of

advice givers (Boutin-Foster, 2005; Smith & Goodnow, 1999). Social norms on support

interactions cause advice receivers to act in the maintenance of advice giver face, even

when advice receivers consider the support episode unpleasant. In particular, an advice

receiver's direct rejection of advice threatens the advice giver's face (Goldsmith & Fitch, 1997).

Receptiveness to advice is another area in which facework provides insight. Feng and MacGeorge (2006) explain advice receptiveness as the degree to which advice receivers are prepared to accept and consider advice. Individuals differ on advice receptiveness. Goldsmith and MacGeorge's (2000) study of politeness strategies (Brown & Levinson, 1987) suggests advice receivers' perception of advice quality depends on the interaction goals and the situational context. The researchers found no evidence that advice receivers were more receptive to polite messages. Some participants even evaluated direct or "bald-on-record" advice messages as more effective than messages purposely crafted as more face-saving. Without a clear link between politeness and receptivity, receiver receptiveness may vary based on the nature of the situation. Individuals may perceive advice in particular situations as more appropriate and helpful than other situations. Goldsmith and MacGeorge suggest some individuals may be more sensitive to potential face threats in general. The degree to which an advice giver mitigates the receiver's face may impact how the receiver perceives the advice quality and thereby advice receptiveness.

Empirical research suggests advice receivers react more positively to unrequested advice if they previously requested advice on the distressing issue or event. Goldsmith (2000) conducted two studies, one qualitative and quantitative, to understand whether advice sequence impacts unrequested advice receptiveness. Goldsmith first conducted ethnographic research on advice in daily conversations on college campuses and identified six distinct advice sequences. Goldsmith then conducted a quantitative study

examining responses to the different advice sequences found through the ethnographic research. Goldsmith's quantitative findings supported her ethnographic findings. Advice receivers previously mentioning a particular problem were more likely to accept unrequested advice on the same issue. However, advice received after an individual explicitly acknowledges a problem appeared less face threatening than advice offered prior to asking about the advice receivers' feelings on the issue. Considering Goldsmith's findings, previous request for advice on a particular problem may create a shared reference by which both individuals perceive advice exchange on the issue as less face threatening than if advice on the topic was never requested. Goldsmith's findings suggest advice may not be explicitly requested in a given episode, however previous discussion of the problem may imply a form of advice solicitation, akin to establishing a "standing offer" for advice on the issue.

Lim and Bowers (1991) outlined a communication model of facework based on three "face wants" and corresponding facework types (p. 420). The three face wants consist of fellowship face, competence face, and autonomy face. Each type of face aligns with a particular type of facework. Fellowship face concerns the desire to be included in a group and aligns with solidarity facework. Solidarity facework emphasizes similarities between individuals as members of the same group. Competence face concerns the desire for acknowledgement as being capable and aligns with approbation facework. Approbation facework emphasizes individuals' abilities and skills while downplaying any potential shortcomings. Autonomy face concerns the desire to have freedom to make decisions without others impeding on the decision-making process and aligns with tact facework. Tact facework concerns the manner in which individuals' freedom is framed

during the interaction. Tact shows respect for individuals' freedom through minimal use of directives. The three facework types further correspond to notions of positive and negative face. Solidarity and approbation concern "positive face," or the desire to be valued. Tact concerns "negative face," the desire to act unimpeded.

In testing the framework, Lim and Bowers (1991) found use of solidarity, approbation and tact facework significantly related to relationship closeness. They further determined that increased use of one particular facework type did not result in lessened use of other facework types. Lim and Bowers' delineation of face in three dimensions addresses relational closeness, self-efficacy and decision-making. Therefore, the current study utilizes Lim and Bowers' conceptualization of facework to examine how advice givers perceive their own facework and how advice receivers perceive facework in relation to relational closeness in UHA episodes.

Supportive communication is an interactive process involving two or more individuals. Reactions to support differ based on the specific distressing issue or event and the relationship with the support giver. Advice receivers appear more satisfied with advice when the relationship between themselves and advice givers is close. As observed with advice more generally, reactions to USS differ based on perceived relational closeness. Individuals in close relationships are often aware of distressing events without explicit discussion, and may pick up on nonverbal prompts for support. Consequently, in close relationships where individuals know each other well, support receivers may welcome USS. In less close relationships, or where the relationship appears inappropriate for the particular context, USS can cause discomfort and negative psychological effects. Face and facework may provide an advice-episode level explanation for why USS often

results in negative outcomes for support receivers. As social support aims to benefit another's health and wellbeing, support causing discomfort constitutes a failed support attempt and may cause more harm to support receivers' health than good.

College Student Health Information and Advice Behaviors

The current study examines the relationship between the degree to which college students perceive themselves as capable of finding and utilizing online health information (eHealth literacy level) and offering and receiving UHA. As much lay health information circulates through close personal relationships, UHA from close others likely impacts individual health decision-making. Therefore, the current study is particularly interested in the extent to which college students utilize, or do not utilize, UHA in health decision-making. Contributing to previous research on LHIMB (Abrahamson et al., 2008), the current study examines the frequency with which college students employ health information originating online.

College students represent a distinct population with particular health concerns. As a population, traditional aged college students are less likely than other age groups to suffer from chronic and/or terminal illnesses. College students are generally inexperienced at providing support (Baus, Dysart-Gale, & Haven, 2005). However, issues such as smoking, alcohol use, sex, stress management, exercise and nutrition appear common in college students' health discussions and health information searches (Buhi et al., 2009; Darling, McWey, Howard & Olmstead, 2007; Hanauer, Dibble, Fortin, & Col, 2004; Prokhorov et al., 2003). Though typically not suffering from serious chronic ailments, college students represent an age group at risk for many stigmatized health issues. Issues such as first detection of mental illness, sexually transmitted infections,

unplanned pregnancies and drug and alcohol abuse are not infrequent in college students (Cullum et al., 2013; Davies et al., 2000; Foster, Caravelis & Kopak, 2014; Reavley & Jorm, 2010). The stigmatized nature of such health issues, inexperience in support situations and the appearance of anonymity offered by the Internet may lead many college students to utilize the Internet as the primary source of health information and advice (Berger, Wagner & Baker, 2005; Brashers, Goldsmith & Hsieh, 2002; Cotton & Gupta, 2004; Gray et al., 2005; Morahan-Martin, 2004; Percheski & Hargittai, 2011).

College students appear to enter college with varying degrees of health knowledge and health orientation. Many students report never receiving any health information (Kwan et al., 2010). However, students may not realize the many channels through which they potentially receive health information on a daily basis. Lloyd et al.'s (2013) study on high school students suggests previous coursework in school constitutes students' primary health information source. Following school, other influential health information sources include media, parents and friends. The degree to which previous schooling contributes to students' health knowledge may differ during the transition from high school to college. Reinforcing the importance of close relationships as health information sources, Percheski & Hargittai (2011) found family members and friends as the most common sources of information for first year college students. Students further appear to assess health information source quality. Vader, Walters, Roudsari and Nguyen (2011) found college students reporting health center staff, health educators, prior coursework and parents, in that order, as the most believable health information sources. However, college students lacking prior health knowledge on a stigmatized topic and/or little previous experience in healthcare issues may use the Internet as a primary source to

find health information for themselves, and others (Escoffery et al., 2005; Gray et al., 2005).

As with more generalized studies on online health information seeking, prior research into college students' understanding of credibility in online sources offers varying results (Buhi et al., 2009). Some research suggests students may not critically evaluate health information findings, often trusting the first sites offered by search engines as the most reliable sources of information (Buhi et al., 2009). Alternatively, though students may be attracted to the convenience and anonymity of the Internet, some studies suggest young adults tend to be skeptical users of online health information (Hove, Paek, & Isaacson, 2011; Kwan et al., 2010). More health oriented students appear to conduct additional self-directed health information seeking through multiple channels rather than passively accepting information received via one channel (McKinley & Wright, 2014).

Students appear to vary in eHealth literacy levels, particularly in the ability to evaluate online health sources. Generally, US young adults have the highest level of Internet access in the world (Buhi et al., 2009; Eynon & Malmberg, 2012; Gray, Klein, Noyce, Sesselberg, & Cantrill, 2005). However, access to online health information does not necessarily mean college students have advanced Internet skills. Previous research suggests college students might not be as tech savvy as "digital natives" theory proponents claim (Hargittai, 2010). Some students have high eHealth literacy levels while others have considerably lower eHealth literacy levels (Gray et al., 2005). Many students lack the critical skills necessary to decipher high credibility sources from less credible sources (Denison & Montgomery, 2012; Escoffery et al., 2005; Stellefson et al.,

2011). In sum, students appear to enter college with widely varying levels of health knowledge and eHealth literacy. Previous research suggests students with higher eHealth literacy levels may be more skeptical of online health information and more likely to use other health information sources to triangulate health findings discovered online.

Research Questions and Hypotheses

To better understand college student LHIMB, the current study examines eHealth literacy, the likelihood to utilize UHA in health decision making, and the likelihood to offer UHA (e.g., become lay health information sources). The study is guided by four hypotheses and three research questions. The four hypotheses and first research question address general UHA communication behaviors. The second and third research questions address advice giver goals/facework and advice receiver evaluation/facework in individual UHA episodes.

Students with higher eHealth literacy levels and health knowledge may seek out more health information in general but may also be less likely to utilize any health information received in their health decision-making process. Therefore, the first hypothesis states individuals with high eHealth literacy will act upon UHA less than individuals with low eHealth literacy.

H1: As eHealth literacy level increases, usage of health information

received via UHA in health decision-making decreases.

Conversely, if individuals are more experienced and critical eHealth consumers, they may offer more knowledge gained online to others. The likelihood to distribute such health information likely increases if the advice giver considers the advice receiver as less informed on health issues. Therefore the second hypothesis

states eHealth literacy level will predict the frequency of unrequested heath advice an individual offers.

H2: As eHealth literacy level increases, the amount of UHA offered increases.

The current study also considers sex as a possible predictor of UHA frequency. Previous studies offer conflicting views on sex differences in LHIMB. Abrahamson et al.'s (2008) research on LHIMB suggests females engage in LHIMB more often than males. Traditional gender roles and caregiving expectations may result in women more actively engaged with the others' health and wellbeing (Boneham & Sixsmith, 2006; Jenkins, 1997). However, Abrahamson's research utilized middle-aged women as participants, not college students. Previous findings from path analysis fail to provide any evidence of positive prediction on more general online information seeking behavior based on sex in young adults (Eynon & Malmberg, 2012). Therefore, in order to provide more insight into the relationship between sex and LHIMB, based on Abrahamson et al.'s findings, the third hypothesis predicts females will offer more frequent UHA than males.

H3: Females offer more UHA than males.

With increased access to the Internet, the mediated nature of LHIMB may predict UHA frequency as well. eHealth literacy may provide as strong of a predictive effect as sex. Therefore, the fourth hypothesis predicts individuals with higher eHealth literacy levels will offer more frequent UHA.

>   *H4: Individuals with higher levels eHealth literacy offer more frequent*
>
>   *UHA.*

In addition to the hypotheses, this study seeks to address three research questions. The first research question concerns individuals who both receive and offer lay health information via UHA.

>   *RQ1: What individual characteristics (Sex, Year in College, Self-Rated*
>
>   *Health Status, Perceived Health Compared to Peers, Health Worry,*
>
>   *eHealth Literacy) predict having received and offered UHA?*

The first research question addresses generalized UHA communication behavior. Alternatively, the second and third research questions address specific UHA episodes. Reaction to USS in a specific episode may vary based on the interpersonal relationship (Goldsmith, 2004; Mojaverian & Kim, 2013; Vangelisti, 2009). Relational closeness in an advice episode may play an important factor in advice givers' communication goals and facework performance. Therefore, the second research question asks about the relationship between advice giver goals and the interpersonal relationship:

>   *RQ2: What is the relationship between advice receivers' evaluation of the*
>
>   *advice and perceived facework and advice receivers' relationships*
>
>   *with advice givers?*

Similarly, the interpersonal relationship may factor into how advice receivers evaluate support messages and facework. Therefore, the third, and final, research question asks about the relationship between advice evaluation and the interpersonal relationship:

RQ3: What is the relationship between advice giver goals and

performance of facework and advice givers' relationships with

advice receivers?

Methods

A survey was developed to gain insight into college students' general UHA related behaviors and communication in specific health advice giving episodes (Appendix). The survey requested participants to recall a specific episode where they received UHA and a specific episode where they offered UHA. Participants were not required to have experience as both a UHA receiver and giver to take part in the study. The survey contained multiple-choice items, as well as open-response items prompting participants for a brief response.

Participants

Following IRB approval, participants were recruited through communication courses and snowball sampling from a large university in the Midwest. Undergraduate students were sent an e-mail message providing a link to the online survey. At the discretion of individual instructors, some participants received extra credit for participation in the research.

A total of 254 undergraduate students took part in the study ($N = 254$). Full sample characteristics appear in Table 1. All levels of undergraduate education appear in the sample. The majority of participants were seniors (33%). In descending order, juniors (24%), sophomores (20%) and freshman (17%) rounded out the sample with 6% not reporting a year in college. Participants were asked how many times they visited a doctor in the previous year. The majority of participants (56%) reported one to three doctor

visits in the previous year. Participants were further asked whether they had a chronic illness requiring ongoing medical attention, with 11% reporting a need for ongoing medical care. The majority of the sample had health insurance (85%). Everyone in the sample reported Internet access. Spending 10-19 hours online was the most common amount of time spent online per week among participants (28%). The sample was 58% female.

The survey collected information concerning the prevalence of particular UHA topics from advice receivers. 195 of the 254 participants (77%) reported receiving UHA. Nutrition was the most common UHA topic with 173 participants (89%) reporting receiving such advice. The second most common topic concerned "risky behaviors," including alcohol or drug use, reported by 122 participants (63%). Next, 89 participants (46%) reported receiving UHA on personal hygiene issues. Previous advice concerning mental health issues, such as depression or anxiety, was reported by 74 participants (38%). Only 36 participants (18%) previously received advice on a serious health condition. Finally, 13 participants (7%) received advice on another topic. Pregnancy and insomnia comprised the most commonly reported "other" topics.

The survey collected information on topics of UHA from advice givers. 112 participants (44%) indicated offering UHA to another person. The popularity of unrequested advice topics offered mirrored the popularity of topics of unrequested advice received. Again, nutrition was the most common UHA topic as 85 participants (76%) reported offering nutrition advice. Similarly "risky behaviors" accounted for the second most common UHA topic with 60 participants (54%). Personal hygiene issues were again the third most common category of unrequested advice with 50 participants (45%)

reporting they had offered such advice. 47 participants (42%) offered unrequested advice on mental health issues such as depression or anxiety. Unrequested advice on serious health conditions were noted by 13 participants (12%). Finally, 12 participants (11%) offered advice on another topic.

Procedure and Measures

Following informed consent, the survey asked participants if they had ever received UHA from an individual other than a doctor. Participants answering "yes," identified UHA topics. Participants reporting not previously receiving UHA were automatically redirected to the next portion of the survey. The survey asked advice receivers to identify how often they utilized UHA in health decision-making. Participants recalled a specific advice episode and reported on the relationship with the advice giver. Participants further detailed any actions taken as a result of the UHA. Using the specific advice episode as a reference, participants completed an advice evaluation scale (Guntzviller & MacGeorge, 2013) and an advice appraisal facework scale (Lim & Bowers, 1991). All items appeared as 5 point-likert scales ranging from *strongly disagree* to *strongly agree.*

The survey asked participants if they had ever offered another person UHA. Participants answering "yes," identified how often they offer UHA, to whom they primarily offer UHA, the topics about which they offer advice, and motivation for offering unrequested advice. Participants reporting not previously offering UHA were automatically redirected to the next portion of the survey. Like advice receivers, advice givers recalled a specific episode in which they offered unrequested advice. Using the specific advice episode as a reference, participants completed an advice giver goal scale

(Guntzviller & MacGeorge, 2013) and an advice giver facework scale (Lim & Bowers, 1991) based on the advice episode. The items appeared as 5 point-likert scales ranging from *strongly disagree* to *strongly agree.* Following completion of the advice scales, participants were asked where they gained the knowledge offered in the advice, to describe the relationship with the advice receiver, and explain whether the advice receivers communicated a desire for advice other than explicitly asking for it.

All participants were asked to complete the eHEALS eHealth literacy scale (Norman & Skinner, 2006b). As with the previous scale items, each item of the eHEALS appeared as 5 point-likert scales ranging from *strongly disagree* to *strongly agree.* The survey asked all participants to report how many hours per week they spend using the Internet. Participants were asked if they had health insurance, how many times they visited a doctor in the previous year, and whether they required ongoing medical attention. Participants were then asked three distinct items concerning perceived health status (Prokhorov et al., 2002): "How would you rate your overall health," "How would you rate your health compared to the average person your age," and "How much do you worry about your health?"

Advice evaluation and goals. Based on MacGeorge's (2001) previous research on interaction goals in social support, Guntzviller and MacGeorge (2013) developed two separate scales for assessing advice episodes, one for advice receivers and one for advice givers. Guntzviller and MacGeorge tested the scales experimentally through use of advice giver and receiver pairs. The researchers' exploratory factor analysis of the 26-item advice evaluation scale following the paired advice episodes resulted in five factors. The five factors consisted of: (a) efficacy/feasibility, (b) confirmation, (c) absence of

limitations, and (d) positive facework and (e) negative facework. Low internal reliability and concern over how facework was operationalized in the positive and negative facework items in Guntzviller and MacGeorge's original study lead to adoption of a different measure to measure facework in the current study. The current study utilized Guntzviller and MacGeorge's subscales addressing efficacy/feasibility, confirmation, and absence of limitations for advice receivers. Efficacy/feasibility addresses whether the advice receiver felt the advice suggested an action the individual could reasonably take. Confirmation concerns whether advice on particular action reflected action the advice receiver already planned to take. Absences of limitations concern the degree of perceived complications and disadvantages the advice receiver anticipated based on the advice. The three subscales demonstrate acceptable internal reliability in the current study (Table 2). Confirmatory factor analysis results for advice receiver evaluation (ARE) factors appear in Table 3.

Guntzviller and MacGeorge's (2013) advice goal scale examines the degree to which advice givers exerted effort into particular interactional goals. The original researchers' exploratory factor analysis on the advice giver goal scale in advice pairs resulted in five factors: politeness, change, efficacy/feasibility, absence of limitations, and novelty. The subscales for change, efficacy/feasibility, absence of limitations and novelty were used for the advice giver goal (AGG) scale in the current study. As new facework items were used for advice receivers, similar facework items addressed the advice giver in the place of the politeness subscale.

The change subscale addresses attempts by the advice giver to modify the advice receiver's actions on the issue. Efficacy/feasibility addresses whether the advice giver

attempted to advise actions perceived as reasonable actions the advice receiver could follow through upon. Absence of limitations concerns the degree to which the advice giver anticipated complications or disadvantaged from potential actions taken based on the advice. Novelty concerns the extent to which the advice giver felt the advised action was a new course of action for the advice receiver. Three of the four subscales demonstrated acceptable internal reliability in the current study (see Table 2). Subscales for change, efficacy/feasibility, and novelty all appear similar in terms of reliability to Guntzviller and MacGeorge's (2013) study. However, the subscale for absence of limitations, which was lower in reliability than the other factors in Guntzviller and MacGeorge's study, demonstrated poor internal reliability in the current study. Therefore, the items for absence of limitations in the AGG were not included in further data analysis. Confirmatory factor analysis results for the factors of the AGG scale used in the current study appear in Table 4.

Facework. Low reliability for the positive and negative facework items and concern over how facework was operationalized in Guntzviller and MacGeorge's (2013) original study lead to adoption of a separate facework measure for advice givers and receivers. Instead of conceiving of facework in terms of negative and positive face like Guntzviller and MacGeorge, the current study employed Lim and Bower's (1991) explanation of facework as consisting of three dimensions (solidarity, approbation, and tact). Solidarity concerns an individual's desire to be included and occurs through receipt of affirming and accepting messages. Advice givers communicate solidarity by identifying with advice receivers and emphasizing commonalities in experiences. Approbation concerns the acknowledgement of an advice receiver's competence. Advice

givers communicate approbation by offering reaffirming statements, such as compliments, and recognizing the advice receiver's own capabilities in capably addressing the issue. Tact concerns an advice receiver's freedom to ultimately decide what would be the most appropriate course of action. Advice givers communicate tact by recognizing the advice receiver as capable of making decisions and refraining from offering directive advice.

As a whole, use of the advice appraisal facework (AAF) measure failed to improve reliability (see Table 2). The approbation subscale demonstrated improved reliability over the Guntzviller and MacGeorge (2013) facework items. Solidarity items demonstrated acceptable reliability. Tact items, however, demonstrated poor reliability. As the tact subscale demonstrated poor reliability, the items were not utilized in data analysis. Confirmatory factor analysis results for the factors of the AAF scale utilized in the current study appear in Table 5.

The advice giver facework (AGF) scale appeared similar in terms of internal reliability to the AAF scale. Solidarity and approbation subscales demonstrated adequate reliability (Table 2). As with the AAF, AGF tact subscale items demonstrated poor reliability. Two items were removed in an attempt to improve reliability of the subscale. However, following removal of the two underperforming items, reliability of tact subscale items remained rather poor, Cronbach's Alpha = .62, ($M = 5.04$, $SD = 1.75$). As the AGF tact subscale demonstrated poor reliability, the items were not utilized in data analysis. Confirmatory factor analysis results for the factors of the AGF scale utilized in the current study appear in Table 6.

eHealth Literacy. Norman and Skinner's (2006) eight-item eHealth Literacy Scale (eHEALS) measured students' self-reported eHealth literacy. The scale provides a concise and reliable means to assess college advice givers' self-reported eHealth skills. eHealth literacy concerns an individual's degree of competency in searching, understanding, analyzing and utilizing online health information. In Norman and Skinner's initial study, a principal components analysis (PCA) revealed all eight items of the EHEALS loaded on a single factor with a Cronbach's Alpha of .88. The researchers further successfully tested the eHEALS for reliability four times over a six-month period on a sample of 664 participants ranging in age from 13 to 21. The eHEALS demonstrated high reliability in the current study, Cronbach's Alpha = .93, (M = 30.01, SD = 5.56). Confirmatory factor analysis results for the eHEALS appears in Table 7.

Variable Transformation and Coding

Following confirmatory factor analyses, the subscales from the ARE, AAF, AGG, AGF scales and the eHEALS were summed into individual continuous variables. Advice receiver variables consisted of efficacy/feasibility, confirmation, absence of limitations, facework appraisal solidarity and facework appraisal approbation. Advice giver variables consisted of change, efficacy/feasibility, novelty, and facework solidarity and facework approbation. Initial tests for scale normality suggested a slight kurtosis issue on the ARE efficacy/feasibility variable. After initial examination of variable frequencies, one outlier case was instantly detected and removed. Examining descriptive statistics finds no evidence of severe skewness or kurtosis (see Table 8 for complete list of descriptive statistics for scale variables).

In addition to the multiple-choice scales, the survey included a number of open-ended questions. The purpose of the open-ended questions was to allow participants freedom to describe relationships with advice givers/receivers and expand on advice behaviors. Open-ended responses were examined for themes to code as variables for data analysis. Prior to completion of the ARE and AAF scales, participants were asked the open-ended question, "What was your relationship with the person who offered you advice?" As a large number of answers reflected intimate and close relationships (e.g., parent, spouse, significant other, best friend), a dummy variable was created to identify close relationships in advice giving episodes. If participants described the relationship with the advice giver as a parent, spouse, sibling, significant other, or best friend, the relationship was identified as close. If participants described the relationship with the advice receiver as a stranger, acquaintance, or distant relative, the relationship was not identified as close. 177 participants provided answers to the question. 143 (81%) identified the relationship with the advice giver as close. To examine the degree of expertise perceived in the advice offered, a dummy variable was created to identify participant reported expertise of advice givers. Only nine advice receivers expressed that the person offering them advice was an expert on the topic. Therefore, 95% of participants did not view individuals offering UHA as experts.

The survey included an open-ended question asking, "How did you act upon the advice?" Examination of open-ended responses resulted in creation of three dummy variables. The dummy variables concerned whether participants conducted follow-up research on UHA information, whether participants conducted follow-up research online and whether participants acted upon the advice. The first dummy variable identified

whether participants conducted further research on the advice received following the advice episode. Of the 172 participants providing information on the question, 33 (19%) conducted future research on the advice. Of those 33 participants, 10 (30%) conducted follow-up research online. Responses were further examined to identify participants acting in accordance with the UHA. Examples of responses indicating participant action consistent with advice included "I took the medication that she thought I needed" and "I tried their advice to see if it worked for me." Of the 167 that acted in some way based on the advice, 103 (62%) utilized the advice information in health decision-making.

The survey asked UHA givers, "What is your primary motivation for offering unrequested health advice?" Examination resulted in three themes: (a) advice giver personal experience, (b) advice giver knowledge, and (c) a concern for and desire to help others. A dummy variable was created to identify when previous personal experience in the topic of advice was a motivator for offering UHA. Of the 111 participants providing information for the question, 15 (14%) acknowledged personal experience with the topic as motivation for offering advice. A dummy variable was created to identify if previous knowledge through prior research or education was a motivator for offering UHA. 111 participants answered the question, and 29 (26%) reported feeling motivated to offer unrequested advice because of information they had to offer. The majority of participants (67%) indicated motivation deriving from a concern for others and desire to help.

Advice givers reported on a particular advice episode when completing the AGG and AGF scales. These participants were asked the open-ended question, "What was your relationship with the person you offered advice to?" Like the advice receiver open-ended question, a dummy variable was created to identify whether relationships between the

individuals in the advice giving episodes were close. If participants described the relationship with the advice receiver as a parent, spouse, significant other, or best friend, the relationship was identified as close. If participants described the relationship with the advice receiver as a stranger, acquaintance, or distant relative, the relationship was not identified as close. Of the 108 participants responding to the open-ended question, 92 (85%) identified the relationship with the other individual as close.

Another open-ended question, "Where did you gain the knowledge that you offered the person," was included to better understand where participants received the information they offered in specific UHA episodes. Based on examination of responses, dummy variables were created to identify if the information originated from personal experience (64%), formal education (15%), the media (e.g., magazines, TV shows) (8%) or online (6%). Another variable was created to identify if the source was identified as an expert on the topic. Only 10 participants (9%) indicated the source was an expert.

A final open-ended question "Did the individual communicate that they wanted advice in another way than explicitly asking?" was included to gain insight into whether advice givers felt those individuals of whom they offered UHA solicited advice in a way other than explicit verbal request. Of the 106 participants responding to the question, almost half (42%) of advice givers identified that the advice receiver solicited advice in a way other than through verbal request. Advice givers reported advice receivers solicited advice several ways, including: hinting they wanted advice, bringing up the issue repeatedly, indicating they were currently struggling with the issue, stating they did not know what to do about the issue, complaining about the issue, or from having previously directly asked the advice giver questions on a similar issue.

Following variable coding on responses to open-ended questions, a cross-tabulation was performed to identify the how many participants had previously offered unrequested advice and received unrequested advice. Results of the cross-tabulation appear in Table 9. A total of 100 participants reported having received and offered UHA, reflecting approximately 39% of the total sample. Females accounted for 64% of the participants reporting previously receiving and offering UHA. Following cross-tabulation, a new dummy variable was created to identify participants that both received and offered UHA.

Results

General UHA Communication Behaviors

H1 predicted that as eHealth literacy levels increases, use of UHA in health decision-making decreases. A hierarchical multiple regression was performed to test H1 (Table 10). Cases with missing data were excluded listwise ($N = 173$). Year in college and sex were entered as covariates in the first block. Health vulnerability items (e.g., self-perceived health, health comparison with peers and health worry) were entered in the second block. The hierarchical multiple regression produced a significant model, $F(6, 166) = 2.33$, $p < .05$, $R^2 = .05$. How participants rated their health ($\beta = .20$, $t[166] = 2.14$, $p < .05$) and the degree of health worry ($\beta = .21$, $t[166] = 2.80$, $p < .01$) served as positive predictors of frequency in utilizing UHA in health decision-making. However, eHealth literacy, $\beta = .03$, $t(166) = .32$, $p > .05$, did not predict frequency in utilizing UHA in health decision-making. Further, there exists no significant correlation between eHealth literacy and utilizing UHA in health decision

making, r (171) = .04, p > .05. Therefore, examination of the observed data fails to support H1.

H2 predicted that as eHealth literacy level increases the amount of UHA offered increases. A second hierarchical multiple regression was performed to test H2 (Table 11). Cases with missing data were excluded listwise (N = 108). Year in college and sex were entered as covariates in the first block. eHealth literacy was entered in the second block. The hierarchical multiple regression failed to produce a significant model, F (3, 104) = 2.02, p > .05, R^2 = .03. There further exists no significant correlation between eHealth literacy and offering UHA, r (106) = .12, p > .05. Therefore, examination of the observed data fails to support H2.

H3 predicted females would offer more frequent UHA. H4 predicted individuals with higher eHealth literacy would offer more frequent UHA. A causal model was conducted using OLS to test H3 and H4 (Figure 1). The correlation matrix utilized in the OLS model appears in Table 12 (N = 104). Test of the pathway for Hypothesis 3 demonstrated that the projected model was inconsistent with the observed data, χ^2 (1, N = 104) = 50.63, p < .05. Test of the pathway for Hypothesis 4 demonstrated that the projected model was not inconsistent with the observed data, χ^2 (1, N = 104) = .62, p > .05. Test for the individual path coefficients did not reveal a significant path from eHealth literacy to motivation to share knowledge, ρ = .16, t (102) = 1.64, p > .05. Similarly, the path from motivation to share knowledge to frequency of UHA was not significant, ρ = .14, t (102) = 1.53, p > .05. The indirect effect of eHealth literacy

on frequency of UHA was not significant, Sobel = 1.09, $p > .05$. Through test of the causal model, examination of the observed data fails to support H3 and H4.

RQ1 asked what individual characteristics (sex, year in college, self-rated health status, perceived health compared to peers, health worry, eHealth literacy) predict a participant having received and offered UHA. Participants were identified as having received and offered UHA through a dummy variable, $0 = No, 1 = Yes$. A hierarchical logistic regression was performed to answer RQ1 (Table 13). Cases with missing data were excluded listwise ($N = 228$). The hierarchical logistic regression produced a significant model, $\chi^2 = 13.22$ (6, $N = 228$), $p < .05$, $R^2 = .06$. Worry about one's own health ($\beta = .52$, Wald χ^2 (1) = 9.11, $p < .01$) positively predicted receiving and offering UHA. Therefore, the current data suggests that as health worry increases, so does likelihood to both receive and offer UHA.

Individual UHA Episodes

RQ2 asked about the relationship between advice recipients' advice evaluation and perceptions of facework and the interpersonal relationship with the advice giver. A correlations analysis (Table 14) was performed to address RQ2. There exists a significant correlation between advice receiver perception of the interpersonal relationship with the advice giver as close and perceptions that communication of the advice expressed solidarity, r (156) = .33, $p < .01$. There further exists a significant correlation between advice receiver perception of the interpersonal relationship with the advice giver as close and perceptions that the

UHA confirmed a course action already held by the advice receiver, r (156) = .19,

$p < .05$.

RQ3 asked about the relationship between advice giver goals and

facework and the interpersonal relationship with the advice receiver. A

correlations analysis (Table 15) was performed to address RQ3. There exist no

significant correlations between AGG and AGF variables and perception of the

interpersonal relationship with the advice receiver as close. Examination of the

observed data suggests no significant relationship exists between advice giver

goals and advice giver facework and perception of the relationship with the advice

receiver as close.

Discussion

The current study attempted to better understand college student LHIMB through

examining the relationship between eHealth literacy and UHA. In order to address the

multifaceted nature of LHIMB, participants provided details on general UHA behavior

and recalled specific UHA episodes. Though the observed data fails to support the study

hypotheses, study findings still provide insight into college student LHIMB. Findings on

general college student LHIMB suggest eHealth literacy does not influence frequency of

UHA, or likelihood to utilize information received from UHA in health decision-making.

In essence, there appears no significant relationship between eHealth literacy and UHA

behaviors for advice receivers or advice givers. However, self-perceived health status and

degree of health worry were found to significantly predict utilizing information received

through UHA in health decision-making. Health worry appeared again as a significant

predictor for participants reporting previously receiving and offering UHA. Students with

greater health worry appear significantly more likely to serve as both lay health information sources and receivers, and utilize information received from UHA in health decision-making.

Findings regarding specific UHA episodes suggest the majority of UHA exchanges take place within close relationships. Contrary to expectations, few advice givers cited the Internet as the source of health information offered through UHA in specific UHA episodes. Rather, the majority of advice givers in the current study identified personal experience as the source utilized most often in UHA message content. The popularity of personal experience as a health information source potentially raises concern. The vast majority (95%) of participants did not consider the individual offering UHA an expert. However, relatively few advice receivers (19%) conducted any follow-up research on health information received through UHA from close others. As few advice givers cited the Internet as the source of health information, college students appear critical of online professional and lay health information. However, college students appear simultaneously uncritical of lay health information received through the opinions and personal experiences provided by close others.

General College Student LHIMB

The first hypothesis (H1) predicted that use of health information received through UHA in health decision-making would decrease as eHealth literacy increase. The current data fails to support H1. Though eHealth literacy failed to significantly predict frequency of UHA use in health decision-making, the current data reveals two significant predictors: self-perceived health status and degree of health worry. These findings appear consistent with Dutta-Bergman's (2005b; 2004b) notion of health orientation. Students

perceiving themselves as in good health may be more health oriented and utilize multiple health information sources, including lay sources, in health decision-making. Individuals with higher health worry levels may more frequently seek out health information and utilize more health information sources in health decision-making (Baumgartner & Hartmann, 2011; Fergus & Valentiner, 2012). The current data provides preliminary evidence that lay health information utilization in health decision-making increases as health worry increases.

Testing H1 offers two significant predictors for utilizing information from UHA in health decision-making. However, the current data offers little insight into what predicts frequency of offering UHA. The second hypothesis (H2) predicted that as eHealth literacy levels increase, frequency of offering UHA would increase. Contrary to H2, eHealth literacy did not significantly predict advice giver UHA frequency. The myriad of health information sources available online creates potential for individuals with high levels of eHealth literacy to consider themselves lay health experts. Self-perceived lay health experts may offer more frequent UHA. However, the current data suggests eHealth literacy does not significantly predict UHA frequency. The current findings appear inconsistent with previous findings suggesting "connected individuals" represent a strong influence on the health information circulation of their communities (Abrahamson et al., 2008; Dutta-Bergman, 2005b). Individuals with a greater depth or breadth of health knowledge may influence the circulation of health information in the community but the current study provides no evidence for a relationship between eHealth literacy and circulation of health information through UHA.

A causal model on the observed data failed to support two separate hypothesized pathways, sex (H3) and eHealth literacy (H4), to more frequent UHA offering. Circulation of lay health information through informal channels, such as interpersonal relationships, does not represent a new phenomenon. However, increases in Internet access among young adults may influence online health information source preference as well as how college students circulate lay health information. Concurrently, traditional conceptions of women as caregivers focused on the others' health and wellbeing may account for previous findings regarding females' greater likelihood to engage in LHIMB, and result in more frequent UHA (Abrahamson et al., 2008; Boneham & Sixsmith, 2006; Jenkins, 1997). The observed data failed to support the notion that females would offer more frequent UHA (H3) as would individuals with higher eHealth literacy levels (H4). The results of the causal model contradict previous research suggesting females engage in more frequent LHIMB (Abrahamson et al., 2008). Contemporary college student females may be less apt to subscribe to traditional sex roles due to changing societal notions on gender and gender roles. Alternatively, social roles expectations may differ between young adult females with college student responsibilities and middle aged, or older, females who more traditionally serve in caregiver roles.

As lay health information flows through informal channels such as close relationships and community connections (Boneham & Sixsmith, 2006; Dutta-Bergman, 2005a; Ford & Kaphingst, 2009), the current study surmised that many individuals receiving lay health information through UHA might offer lay health information through UHA. Many participants reported both receiving and offering UHA. The first research question (RQ1) inquired into the individual characteristics of individuals receiving and

offering UHA. One significant predictor emerged from the data, health worry. Participants that received and offered UHA report significantly higher levels of health worry. Examination of the data on participants reporting previously offering and receiving UHA therefore supports findings on UHA information utilization in receivers. Higher levels of health worry may lead individuals to utilize health information received from UHA and circulate information to others through UHA out of similar worry about others' health and wellbeing.

Individual UHA Episodes

Most individual UHA episodes in the current data took place within close interpersonal relationships. Over 80% of advice receivers and advice givers identified the relationship in the specific UHA episode as close. Around 60% of participants utilized the health information obtained through UHA to some extent in health decision-making process. At the same time, less than 20% of participants reported conducting follow-up research on the health information received through UHA. These findings support previous studies highlighting the importance of close interpersonal relationships, such as family and friends, as sources of health information (Dutta-Bergman, 2004b; Ford & Kaphingst, 2009; Tardy & Hale, 1998). The findings further raise new questions about health information source credibility. Close relationships constitute significant influences in college students' lives as sources of health information. Yet, less than half of advice receivers seriously questioned the credibility of health information received through UHA when the information was received within a close interpersonal relationship. College students therefore appear less critical of interpersonally communicated lay health

information than online lay health information, privileging health information offered by
close others.

Concern over lay health information credibility (Hajil et al., 2014; Lederman et
al., 2014) warrants examination into the origins of UHA information. Over 60% of advice
givers identified the health information source for UHA as personal experience.
Meanwhile, contrary to previous findings suggesting young adults privilege the Internet
as a health information source (Ivanitskaya et al., 2006; Lloyd et al., 2013; Percheski &
Hargittai, 2011), only 6% of advice givers in the current study identified the Internet as
the source for UHA information. The low percentage of students reporting the Internet as
the source for the health information offered through UHA may reflect previous findings
that young adults are skeptical of online health information (Hove et al., 2011; Kwan et
al., 2010). Additionally, the current findings support previous findings on lay health
information exchange through YouTube videos and commentary, where much
information originated in personal experience (Frohlich & Zmyslinski-Seelig, 2012).
College students seldom utilize health information originating online for UHA message
content. Since eHealth literacy levels in the current study were quite high on average (M
$= 30.02$), students appear to perceive themselves as capable of finding and evaluating
health information online. However, they do not appear as avid online health information
consumers and mediaries. Rather, personal experience represents the most common
health information source utilized for UHA message content.

Findings from the current study regarding advice givers question previous
findings on USS and UHA. Around 40% of advice givers reported that even though the
advice receiver did not explicitly request advice, the advice receiver indirectly solicited

advice. Common perceptions that advice receivers solicited advice nonverbally may support previous suggestions that college students specifically (Baus et al., 2005), as well as the general population (Goldsmith, 2004), lack skill in providing social support. Such findings may also reinforce previous research documenting an assumption that individuals experiencing a distressing event always need advice (Feng, 2009). Alternatively, such findings may reflect a more pro-social justification for perceived indirect advice solicitation. The current data on general UHA motivation suggests 67% of participants offer UHA out of desire to help compared to 26% reporting a desire to share knowledge. Advice given with close relationships may reflect an already extant knowledge of the impact of particular distressing events on advice receivers. As many advice givers reported pre-existing knowledge and previous discussion on the particular topic, many "new" UHA episodes may actually appear as a node of a series of conversations and reflect belief in a standing offer for offering advice on the topic (Goldsmith, 2000) due to the previous conversations, rather than a lack of support skill.

The second research question (RQ2) addressed the relationship between advice evaluation, perceived facework and relationship with advice givers. Perceptions of confirmation and solidarity correlated with UHA within a close relationship. Individuals receiving UHA within close relationships appeared significantly more likely to report the UHA as reflecting a previously planned course of action. Relational closeness may allow advice givers to perceive actions advice receivers would like to take on a particular matter, and endorse that course of action through the UHA. If college student advice givers tailor messages to satisfy advice receivers, or at least if receivers perceive validation through UHA, such findings contradict previous research suggesting UHA

may inherently constitute a threat to individuals' self-efficacy (Boutin-Foster, 2005; Smith & Goodnow, 1999; Thompson & O'Hair, 2008; Uchida et al., 2008). College student participants in the current study appear to perceive of themselves as controlling health decision-making, even when utilizing information from UHA.

Considering advice evaluation and facework, individuals receiving UHA from close others appear significantly more likely to perceive solidarity in the UHA. As detailed by Lim and Bowers (1991), solidarity relates to the notion that those involved in the advice episode are affiliated and of equal status. Perceiving solidarity in UHA episodes within the context of a close interpersonal relationship may not represent a particularly surprising finding. The types of close interpersonal relationships present in the data and identified through coding, consisted of parents, siblings, significant others (such as boy/girlfriends) and best friends. All relationship types represented in the close relationship variable thus reflect group affiliations, either through a family, friendship or romantic couple. As long as individuals consider the topic appropriate within the relationship (Vangelisti, 2009), UHA offered by close family members, friends or significant others likely reflects and reinforces group affiliations.

No significant findings appeared in response to the third, and final, research question (RQ3). Despite the information gained through analysis on open-ended responses, the current data suggests no association between relationship closeness, advice giver goals and facework. Examination of the observed data suggests advice givers appear guided by similar goals and perform similar facework regardless of the nature of the relationship. Similarities in advice approach regardless of the nature of the relationship may support previous suggestions that college students lack skills as support

givers (Baus et al., 2005). However, as previously mentioned, UHA givers appear generally motivated by a concern for others' well-being and desire to help. UHA givers may therefore behave similarly regardless of the relationship due to a general desire to help others. As personal experience appears as the most popular source for UHA information, advice givers may package their personal experience similarly regardless of the advice receiver.

Limitations and Future Research

The current study offers a focused look on specific aspects of LHIMB, eHealth literacy and UHA, than previous research in LHIMB. However, the study does include a number of limitations. Limitations in sampling, research design and measurement in the current study provide opportunities for future research.

The current study utilized a convenience sample of college students in communication courses. With a specific focus on college students, such a sample is appropriate. Previous research on LHIMB, however, focuses on middle-aged individuals concerned about older family members with chronic health issues (Abrahamson et al., 2008). Though many college students act as caregivers for older adults (Baus et al., 2005), most college students may not be concerned about serious health ailments, in themselves and others. As the current study only considers college student LHIMB, findings from the current study appearing to contradict findings from previous research into LHIMB must be interpreted cautiously. Different age groups appear to respond differently to USS (Smith & Goodnow, 1999). As LHIMB represents a form of USS, LHIMB likely differs across age groups and demographics. Given the findings of the

current study, future research on college student specific LHIMB should focus on the use of personal experience in sharing health information.

The current study design represents another possible area of limitations. Self-report may influence participants' acknowledgment of previously offering UHA. One of the beliefs underlying the current study was that college students receive *and* circulate lay health information as UHA givers *and* receivers. Though a number of participants identified as both UHA givers and receivers, many participants only identified as receivers. As Abrahamson et al. (2008) found many individuals engaging in LHIMB not self-identifying as lay health information mediaries, perhaps many college students offering UHA do not view themselves as doing so. An alternative explanation concerns the sequence of the survey items. Since the survey presented all items on advice receiving first, and then followed with advice giving items, some participants may have reported not previously offering UHA simply in order to complete the survey more quickly. However, such findings may suggest that college student UHA receivers and givers constitute different types of individuals. Future research should attempt to replicate the current findings with two separate data sets, one for advice receivers and one for advice givers.

The current study further supported use of Guntzviller and MacGeorge's (2013) advice receiver and advice goal scales but was unable to significantly improve on the facework measures used in Guntzviller and MacGeorge's study. The ARE and AGG scales, developed for usage in advice pairs, appear acceptable and reliable when applied to the within-subject research design. With the exception of the AGG limitations subscale, all advice subscales adapted from Guntzviller and MacGeorge demonstrated a

Cronbach's alpha above .80. Measurement of face and facework, however, appears more challenging. As Guntzviller and MacGeorge's positive and negative facework subscales items suffered from lower reliability than the other subscales in the original study, the current study adapted facework measures from Lim and Bowers (1991). Solidarity and approbation subscales demonstrated acceptable reliability, demonstrating a Cronbach's alpha of .70 or above for both advice givers and advice receivers. However, tact subscales demonstrated low reliability, with Cronbach's alpha below .50 for both advice givers and advice receivers. Individual differences in face sensitivity may explain some of the difficulty in establishing high internal reliability for facework scales (Caplan & Samter, 1999; Goldsmith & MacGeorge, 2000). Future studies should attempt to further develop and refine methods for measuring facework in advice episodes while accounting for individual differences in face sensitivity.

The current data offers preliminary support that individuals who worry more about their health may be more receptive to health information received from UHA. Though potentially an intriguing finding, health worry was measured through a single item from a health vulnerability scale (Prokhorov et al., 2003). To better understand the relationship between health worry and utilizing health information received through UHA in health decision-making, future research would benefit from usage of more sophisticated health vulnerability and health anxiety measures.

Practical Implications

In addition to contributing to research on LHIMB, eHealth literacy and social support, findings from the current study may interest campus health staff and college student wellness educators. These data provide evidence that college students engage in

LHIMB. Prior research into LHIMB and social support on health issues predominately focuses on severe and chronic ailments, issues in which college students, and other young adults, appear less likely to be engaged. However, college students still circulate health information through UHA. Students appear to primarily offer and receive health information on topics germane to life as a college student and living on one's own for the first time such as nutrition, sex, personal hygiene, and mental health issues such as stress and depression.

Campus health staff should also take note of the significance of health worry in the current data. Health worry appears as a significant predictor of utilizing UHA in health decision-making and serving as a source and recipient of lay health information. Students worried about their health appear more likely to utilize lay health information received through UHA and pass on that information through further UHA. Since college students may thus be more vulnerable to misinformation, or at least misleading information, special attention should be made to provide students with high levels of health worry with reliable, quality health information and resources, particularly mental health resources.

Despite increased scholarly attention to the Internet as a health information source, the current data suggests eHealth literacy imparts no influence on UHA frequency. Students may differ in eHealth literacy level, but there appears no evidence that students with higher levels of eHealth literacy offer more UHA to peers. Additionally, students appear more interested with first-hand health information than information originating from outside sources, including professional medical organizations and the media. Instead, students appear more focused on personal

experience as a marker of health information *ethos*. Knowledge that college students are more likely to offer and receive UHA originating through personal experience provides health and wellness educators insight into potentially effective approaches to target health information to incoming students. Providing personal health narratives by current students may prove more effective than exclusively utilizing traditional health information sources reflecting recommendations from credible medical professionals and organizations in persuading new college students into adopting healthy habits for college and beyond.

Conclusion

The current study provides no evidence of a relationship between college student eHealth literacy and UHA. However, the study provides evidence that students provide and utilize lay health information, primarily rooted in personal experience, through UHA. Self-perceived health status and health worry increase the likelihood of utilizing information from UHA in health decision-making. As the Internet appeared a relatively infrequently utilized health information source compared to personal experience, findings from the current study suggest concerns over online health information credibility and quality are not necessarily warranted for college students. College students appear critical of online health information. Online health information does not appear to significantly impact college students' health decision-making processes at the expense of health information received through other channels. Conversely, however, the utilization of somebody else's personal experience as a source of health information, particularly for those students already worried about their health, raises new concerns unexpected at the onset of the study.

Current findings supporting close relationships as valued sources of health information for advice receivers and personal experience as the most popular origin of information for advice givers merit future research into the credibility of health information originating in personal experience. College student advice givers appear generally motivated by a desire to help others but may not realize that even if a particular diet, workout plan or supplement helped them achieve results, others may not achieve the same benefit. In sum, the current study provides a better understanding of how college students circulate health information through UHA and provides a basis for future research into what students consider valuable health information sources in health decision-making.

Figure 1

Sex and eHealth Literacy as Separate Pathways to Frequency of UHA Offered

Independent Variables	Mediating Variables (Motivation)	Dependent Variable

Sex   −.01 → Concern for Others

−.11

Frequency of UHA Offered

.15

eHEALS ⟶ Share Knowledge

.16
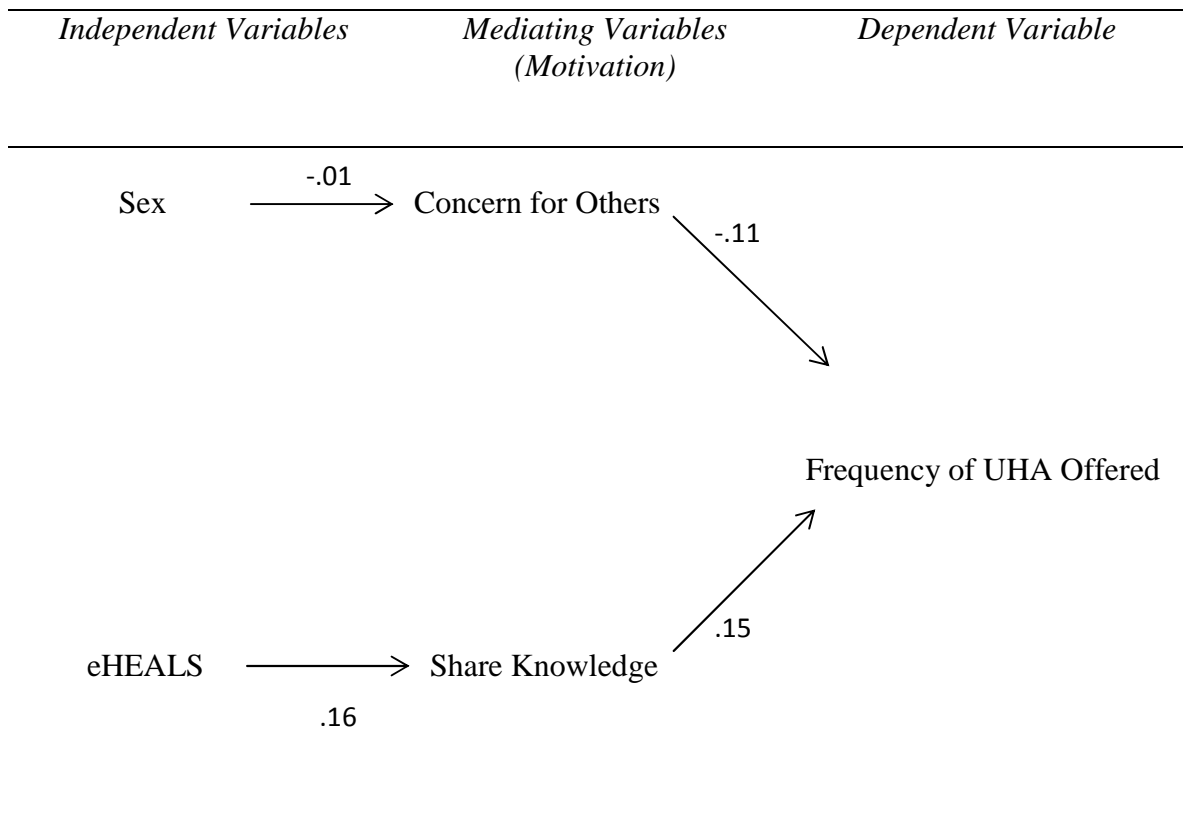
Table 1
Sample Characteristics

	N	%
Sex		
Male	90	35.4
Female	147	57.9
Missing	17	6.7
College Year		
Freshman	43	16.9
Sophomore	51	20.1
Junior	60	23.6
Senior	83	32.7
Missing	17	6.7
Ongoing Medical Attention		
No	207	81.5
Yes	28	11.0
Missing	19	7.5
Health Insurance		
No	19	7.5
Yes	216	85.0
Missing	19	7.5
Internet Use		
1-9 Hours	28	11.0
10-19 Hours	72	28.3
20-29 Hours	56	22.0
30-39 Hours	32	12.6
40+ Hours	39	15.4
Missing	27	10.6
Doctor Visits Previous Year		
None	29	11.4
1-3 Times	143	56.3
4-9 Times	42	16.5
10+ Times	21	8.3
Missing	19	7.5

Table 2
Reliability of Advice Subscales

	Valid	α	Mean	SD
ARE E/F	170	.82	21.44	3.50
ARE Lim	174	.85	7.60	2.43
ARE Con	174	.89	9.77	2.51
AAF Solid	178	.70	13.42	2.75
AAF App	179	.82	10.23	3.45
AAF Tact	178	.49*	10.24	2.43
AGG Ch	109	.83	10.22	2.88
AGG E/F	107	.89	18.77	4.60
AGG Lim	109	.58*	7.32	2.67
AGG Nov	109	.85	8.39	2.28
AGF Solid	111	.75	14.69	2.95
AGF App	109	.78	9.22	3.03
AGF Tact	112	.41*	10.50	2.64

Note: * indicates that subscales were not utilized
in follow-up analyses due to poor reliability.

Table 3
Advice Recipient Evaluation (ARE) Confirmatory Factor Analysis

	Factor Loadings
Efficacy/Feasibility Subscale	
I believe that the advised action could help improve my situation	.76
I perceive that the advised action could help to fix my problems	.83
I think that the advised action could solve my difficulties	.72
The advice given is something I could do	.54
I am capable of accomplishing the advised action	.43
Is it possible for me to do the recommended action	.63

Internal Consistency Test, X^2 (14, N = 170) = 13.75, *p* > .05.

Mean	21.44
Standard Deviation	3.50
Alpha Reliability	.82

Confirmation Subscale	
The advised action is something I had already planned to do	.92
I had already anticipated doing what the advice told me to do	.84
The advice recommends I do something I had already intended	.80

Internal Consistency Test, X^2 (2, N = 174) = 0.77, *p* > .05.

Mean	9.77
Standard Deviation	2.51
Alpha Reliability	.89

Absence of Limitations Subscale

I predict that the advised action will have serious drawbacks	.77
I can see that the advised action has significant disadvantages	.84
I can tell that the advised action would have undesirable effects	.82

Internal Consistency Test, X^2 (2, N = 174) = 0.00, $p > .05$.

Mean	7.60
Standard Deviation	2.43
Alpha Reliability	.85

Table 4
Advice Giver Goal (AGG) Confirmatory Factor Analysis

	Factor Loadings
Change Subscale	
Change the other person's idea for solving the problem	.81
Adjust the other person's plan for dealing with the problem	.61
Alter the other person's understanding of how to solve the problem	.71
Modify the other person's decision about how to handle the problem	.83

Internal Consistency Test, $\mathbf{X^2}$ (5, N = 109) = .078, $p > .05$.

Mean	10.22
Standard Deviation	2.88
Alpha Reliability	.83

Efficacy/Feasibility Subscale

I could help improve the other person's situation	.85
I could help to fix the other person's problem	.79
I could solve the other person's difficulties	.69
The other person was capable of accomplishing the advice	.75
The advice was possible for the other person to do	.69
The other person could do what I advised	.74

Internal Consistency Test, $\mathbf{X^2}$ (14, N = 107) = 5.70, $p > .05$.

Mean	18.77
Standard Deviation	4.60

Alpha Reliability   .89

Novelty Subscale

Offer a course of action the other person   .83
had not previously considered

Offer a course of action the other person   .80
had not thought of

Offer a course of action the other person   .81
had not taken into account

Internal Consistency Test, X^2 (2, N = 109) = 0.17, $p > .05$.

Mean   8.39
Standard Deviation   2.28
Alpha Reliability   .85

Table 5
Advice Appraisal Facework (AAF) Confirmatory Factor Analysis

	Factor Loadings
Solidarity Subscale	
The advice giver acknowledged our relationship as close	.60
The advice giver showed appreciation of me	.62
The advice giver was empathetic	.59
The advice giver emphasized our relationship	.83

Internal Consistency Test, X^2 (5, N = 178) = 7.68, *p* > .05.

Mean	13.42
Standard Deviation	2.75
Alpha Reliability	.70

Approbation Subscale	
The advice giver ignored or belittled my knowledge	.81
The advice giver accused me of not having accurate information	.70
The advice giver told me that I have more to learn	.63
The advice giver undermined my knowledge	.80

Internal Consistency Test, X^2 (5, N = 179) = 0.61, *p* > .05.

Mean	10.23
Standard Deviation	3.45
Alpha Reliability	.82

Table 6
Advice Giver Facework (AGF) Confirmatory Factor Analysis

	Factor Loadings
Solidarity Subscale	
I acknowledged our relationship as close	.73
I tried to show appreciation for the other person	.55
I tried to be empathetic to the other person's situation	.58
I tried to emphasize the importance of our relationship	.75

Internal Consistency Test, X^2 (5, N = 111) = 4.22, *p* > .05.

Mean	14.69
Standard Deviation	2.95
Alpha Reliability	.75

Approbation Subscale	
I ignored things the other person said that did not agree with my advice	.71
I told the other person that s/he did not have accurate information	.88
I told the other person that s/he had more to learn on the topic	.54
I told the other person that what s/he though was wrong	.65

Internal Consistency Test, X^2 (5, N = 109) = 2.54, *p* > .05.

Mean	9.22
Standard Deviation	3.03
Alpha Reliability	.78

Table 7

eHealth Literacy Scale (eHEALS) Confirmatory Factor Analysis

	Factor Loadings
I know how to find helpful health resources on the Internet	.86
I know how to use the Internet to answer my health questions	.85
I know what health resources are available on the Internet	.83
I know where to find helpful health resources on the Internet	.90
I know how to use the health information I find on the Internet to help me	.88
I have the skills I need to evaluate the health resources I find on the Internet	.69
I can tell high quality from low quality health resources on the Internet	.67
I feel confident in using information from the Internet to make health decisions	.74

Internal Consistency Test, $\mathbf{X^2}$ (27, N = 232) = 24.80, *p* > .05.

Mean	30.01
Standard Deviation	5.56
Alpha Reliability	.93

Table 8
Scale Variables Descriptive Statistics

	Valid	Mean	Median	Mode	Skewness	Kurtosis	Range
ARE E/F	169	21.51	22.00	24.00	-.155	.439	19.00
ARE Lim	173	7.60	8.00	6.00	.163	-.258	12.00
ARE Con	173	9.80	10.00	12.00	-.358	-.262	12.00
AAF Solid	177	13.42	13.00	12.00	-.145	.633	16.00
AAF App	178	10.23	10.00	8.00	.356	-.251	16.00
AGG Ch	108	10.26	10.00	8.00	.540	.084	14.00
AGG E/F	106	18.85	18.00	16.00	.291	-.709	19.00
AGG Nov	108	8.42	8.00	6.00	.503	-.591	10.00
AGF Solid	110	14.78	15.00	14.00	.169	-.690	12.00
AGF App	108	9.24	9.00	8.00	.475	.486	16.00
eHEALS	230	30.02	31.00	32.00	-.539	.531	25.00

Table 9
Cross-tabulation of Offering/Receiving UHA

		Offered UHA		
		No	Yes	Total
Received UHA	No	47	12	59
	Yes	79	100	179
		127	112	238

Note: 16 participants did respond to question asking if they had previously offered unrequested health advice (*N* = 238).

Table 10
Hierarchical Regression for Predictors of Utilizing UHA (N = 173)

	Model 1			Model 2			Model 3		
Predictors	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
College Year	2.69	.04	-.08	-.04	.04	-.06	-.04	.04	-.06
Sex	.09	.10	.06	.04	.11	.03	.40	.11	.30
Rate Health				.18	.08	.20*	.18	.08	.20*
Peer Compare				-.09	.07	-1.12	-.09	.07	-.12
Health Worry				.16	.06	.22**	.16	.06	.21**
eHEALS							.00	.01	.03
ΔR^2	-.001			.05			.05		
F	.88			2.80			2.34		

*Note: * p < .05, ** p < .01, *** p < .001.*

Table 11

Hierarchical Regression for Predictors of Frequency Offering UHA (N = 108)

	Model 1			Model 2		
Predictors	*B*	*SE B*	*β*	*B*	*SE B*	*β*
College Year	-.09	.06	-.16	-.09	.05	-.16
Sex	.12	.13	.08	.16	.14	.12
eHEALS				.02	.01	.15
ΔR^2	.02			.03		
F	1.87			2.02		

Note: * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 12
Correlation Matrix for Causal Model (N =104)

	1	2	3	4
SEX 1				
eHEALS 2	-.20*			
HELP 3	-.01	-.01		
KNOW 4	.10	.16	-.51**	
FREQ 5	.09	.13	-.10	.14

Notes: SEX: 0 = MALE, 1 = FEMALE. HELP = Motivated by Desire to Help. KNOW = Motivated by Desire to Share Knowledge/Information. $* p < .05, ** p < .01$.

Table 13
Logistic Regression on Predictors of Offering/Receiving UHA (N = 228)

Predictor	β	$e\,\beta$	R^2
		Offer/Receive UHA	
STEP 1			.003
Sex	.17	1.18	
College Year	.07	1.07	
STEP 2			.05
Sex	.18	1.19	
College Year	.07	1.07	
Self-Rated Health	.07	1.08	
Health Comparison	.13	1.13	
Health Worry	.54**	1.71	
STEP 3			.06
Sex	.27	1.31	
College Year	.06	1.06	
Self-Rated Health	.03	1.03	
Health Comparison	.13	1.14	
Health Worry	.52**	1.04	
eHEALS	0.04	1.04	

Notes: Offer and Receive UHA: 0 = No, 1 = Yes. Sex: 0 = Male, 1 = Female. College Year:
1 = Freshman, 2 = Sophomore, 3 = Junior, 4 = Senior. $e\,\beta$ = Expected. R^2 = Cox & Snell.
* $p < .05$, ** $p < .01$, *** $p < .001$

Table 14
Correlation Matrix for Advice Receivers (N = 158)

	1	2	3	4	5	6	7
SEX 1							
eHEALS 2	-.15						
CLOSE 3	-.07	.05					
E/F 4	-.12	.32**	.10				
LIMIT 5	.15	-.14	.02	-.43**			
CON 6	-.03	.19*	.19*	.50**	-.15		
SOLID 7	.00	.23**	.33**	.29**	-.17*	.25**	
APPRO 8	.15	-.17*	-.14	-.22**	.42**	-.18*	-.36**

Notes: CLOSE: 0 = No, 1 = YES. E/F = Perception of Efficacy/Feasibility. LIMIT = Perception of Limitations. CON = Perception of Confirmation. SOLID = Perception of Solidarity. APPRO = Perception of Approbation. * $p < .05$, ** $p < .01$.

Table 15
Correlation Matrix for Advice Givers (N = 100)

	1	2	3	4	5	6	7
SEX 1							
eHEALS 2	-.23*						
CLOSE 3	.04	-.16					
E/F 4	-.18	.38**	-.15				
CHANGE 5	-.23*	.22*	-.16	.64**			
NOVELTY 6	-.06	.29**	-.06	.48**	.35**		
SOLID 7	.11	.30**	.08	.09	.01	.14	
APPRO 8	-.14	-.05	-.05	.02	.26**	.16	-.10

Notes: CLOSE: 0 = No, 1 = YES. E/F = Perception of Efficacy/Feasibility. LIMIT = Perception of Limitations. CON = Perception of Confirmation. SOLID = Perception of Solidarity. APPRO = Perception of Approbation. * $p < .05$, ** $p < .01$.

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Appendix

Survey

University of Wisconsin – Milwaukee
Consent to Participate in Online Survey Research
IRB #14.347 Approved April 8, 2014

Study Title: College Student Lay Health Information Mediary Behavior: An Examination of eHealth Literacy & Unrequested Health Advice

Persons Responsible for Research: Andrew Cole (Student PI), Mike Allen, (PI). Department of Communication. University of Wisconsin-Milwaukee.

Study Description: The purpose of this research study is to better understand where college students get their health information and how health information is communicated between college students. Approximately 200 subjects will participate in this study. If you agree to participate, you will be asked to complete an online survey that will take approximately 15-20 minutes to complete. The questions will ask you about any experience you have searching for health information online, any experience you have giving and receiving health advice and some general health information.

Risks / Benefits: Risks to participants are considered minimal. Collection of data and survey responses using the internet involves the same risks that a person would encounter in everyday use of the internet, such as breach of confidentiality. While the researchers have taken every reasonable step to protect your confidentiality, there is always the possibility of interception or hacking of the data by third parties that is not under the control of the research team.

There will be no costs for participating. Benefits of participating include furthering research into college student health and social support. Extra credit may be received at the discretion of course instructors. If you are taking the survey as extra credit for a course, you will be forwarded to a separate survey following completion of the study survey. Identifying information such as your name and student ID number will be collected for distribution of extra credit.

Data will be retained on the Qualtrics website server for two years and will be deleted after this time. However, data may exist on backups or server logs beyond the timeframe of this research project. Data transferred from the survey site will be saved in an encrypted format for two years. Only the PIs will have access to the data collected by this study. However, the Institutional Review Board at UW-Milwaukee or appropriate federal agencies like the Office for Human Research Protections may review this study's records. The research team will remove your identifying information before analyzing the data and all study results will be reported without identifying information so that no one viewing the results will ever be able to match you with your responses.

Voluntary Participation: Your participation in this study is voluntary. You may choose to not answer any of the questions or withdraw from this study at any time without penalty. Your decision will not change any present or future relationship with the University of Wisconsin Milwaukee.

Who do I contact for questions about the study: For more information about the study or study procedures, contact Andrew Cole at awcole@uwm.edu.

Who do I contact for questions about my rights or complaints towards my treatment as a research subject? Contact the UWM IRB at 414-229-3173 or irbinfo@uwm.edu

Research Subject's Consent to Participate in Research:
By entering this survey, you are indicating that you have read the consent form, you are age 18 or older and that you voluntarily agree to participate in this research study.

Thank you!

This questionnaire is going to ask you about your experiences receiving and offering health advice without being asked. Some questions will have multiple choice answers while others will have a text box for you to type a response. At the end of the questionnaire, you will be asked for some health and demographic information. Thank you for your participation in this study.

Have you ever received unrequested health advice from somebody who was not a doctor?
Yes
No

Which of the following have you received unrequested health advice on? (Check all that apply)
Personal hygiene issues (ex. Using hand sanitizer, Deodorant)
Nutrition (ex. Vitamins, Nutritional Supplements, Organic foods)
Risky behaviors (ex. Alcohol/drug use, Sexual behavior)
Mental health issues (ex. Depression, Anxiety)
Serious health conditions (ex. Cancer, Heart Disease)
Other (Explain)

How often do you use information gained from unrequested health advice in your health decision-making?
Never
Rarely
Sometimes
Quite Often
Very Often

Please think of a specific time that you received unrequested advice about your health.

What was your relationship with the person who offered you advice? _____

How did you act upon the advice? _____

Please rate the following items concerning the advice you received.

Modified Advice Recipient Evaluation (Guntzviller & MacGeorge, 2012)
I believe that the advised action could help improve my situation
I perceive that the advised action could help to fix my problems
I think that the advised action could solve my difficulties
The advice given is something I could do
I am capable of accomplishing the advised action
Is it possible for me to do the recommended action
I predict that the advised action will have serious drawbacks
I can see that the advised action has significant disadvantages
I can tell that the advised action would have undesirable effects
The advised action is something I had already planned to do
I had already anticipated doing what the advice told me to do
The advice recommends I do something I had already intended
*Items are scored on a 1-5 Likert scale (*Strongly Disagree to Strongly Agree*).

Advice Appraisal Facework (based on Lim & Bowers, 1991: Solidarity, Approbation, Tact)
The advice giver acknowledged our relationship as close (s)
The advice giver showed appreciation of me (s)
The advice giver was empathetic (s)
The advice giver emphasized our relationship (s)
The advice giver ignored or belittled my knowledge (a)
The advice giver accused me of not having accurate information (a)
The advice giver told me that I have more to learn (a)
The advice giver undermined my knowledge (a)
The advice giver tried to avoid imposing a solution on me (t)
The advice giver pleaded with me to try what was advised (t)
The advice giver was hesitant in giving the advice (t)
The advice giver apologized for intruding (t)
*Items are scored on a 1-5 Likert scale (Strongly Disagree to Strongly Agree).

Have you ever offered another person unsolicited health advice?
Yes
No

If yes, how often you offer unrequested health advice?
Never
Rarely
Sometimes

Quite Often
Very Often

If yes, to whom do you primarily offer unrequested health advice? _____

Which of the following topics do you offer unrequested health advice on? (Check all that apply)
Personal hygiene issues (ex. Using hand sanitizer, Deodorant)
Nutrition (ex. Vitamins, Supplements, Organic foods)
Risky behaviors (ex. Alcohol/drug use, Unsafe sex)
Mental health issues (ex. Depression, Anxiety)
Serious health condition (ex. Cancer)
Other (Explain)

What is your primary motivation for offering unrequested health advice? _____

Think of a specific time that you gave another person unrequested advice about his/her health. Any health advice is acceptable ranging from diet/nutrition advice to advice to see a doctor to how to cope with a serious illness. Please rate the following items on how much effort you put into each goal during the specific advice giving conversation:

Modified Advice Giver Goals (Guntzviller & MacGeorge, 2012)
I could help improve the other person's situation
I could help to fix the other person's problem
I could solve the other person's difficulties
The other person was capable of accomplishing the advice
The advice was possible for the other person to do
The other person could do what I advised
My advice would not have serious drawbacks
My advice would not have undesirable effects
My advice would not have significant advantages
Agree with the other person's understanding of how to solve the problem
Support the other person's plan for dealing with the problem
Confirm the other person's decision about how to handle the problem
Change the other person's idea for solving the problem
Adjust the other person's plan for dealing with the problem
Alter the other person's understanding of how to solve the problem
Modify the other person's decision about how to handle the problem
Offer a course of action the other person had not previously considered
Offer a course of action the other person had not thought of
Offer a course of action the other person had not taken into account
*Items are scored on a 1-5 Likert scale (*None* to *All*).

Advice Giver Facework (based on Lim & Bowers, 1991: Solidarity, Approbation, Tact)
I acknowledged our relationship as close (s)

I tried to show appreciation for the other person (s)
I tried to be empathetic to the other person's situation (s)
I tried to emphasize the importance of our relationship (s)
I ignored things the other person said that did not agree with my advice (a)
I told the other person that s/he did not have accurate information (a)
I told the other person that s/he had more to learn on the topic (a)
I told the other person that what s/he though was wrong (a)
I tried imposing a solution on the other person (t)
I pleaded with the other person to do what I advised (t)
I was hesitant in giving the advice (t)
I apologized for intruding in the other person's life (t)
*Items are scored on a 1-5 Likert scale (*Strongly Disagree* to *Strongly Agree*).

Where did you gain the knowledge that you offered the person? _____

What was your relationship with the person you offered advice to? _____

If not, did the individual communicate in another way that they wanted advice? If so, how? _____

Please rate the following items about the nature of your experiences seeking health information online:

eHEALS: eHealth Literacy Scale (Norman & Skinner, 2006)
I know how to find helpful health resources on the Internet
I know how to use the Internet to answer my health questions
I know what health resources are available on the Internet
I know where to find helpful health resources on the Internet
I know how to use the health information I find on the Internet to help me
I have the skills I need to evaluate the health resources I find on the Internet
I can tell high quality from low quality health resources on the Internet
I feel confident in using information from the Internet to make health decisions
*Items are scored on a 1-5 Likert scale (*Strongly Disagree* to *Strongly Agree*)

How many hours per week do you spend using the Internet _____

Do you have health insurance?
Yes
No

How many times have you visited a doctor in the last year? _____

Do you have a chronic illness that requires ongoing medical attention?
Yes
No

How would you rate your overall health?
Very Bad
Bad
Neither Good nor Bad
Good
Very Good

How would you rate your health compared to the average person your age?
Much Worse
Worse
About the Same
Better
Much Better

How much do you worry about your health?
Never
Rarely
Sometimes
Most of the Time
Always

Please select your year in college
Freshman
Sophomore
Junior
Senior
Graduate Student

Sex
Male
Female

Curriculum Vitae

Andrew William Cole

Department of Communication
P.O. Box 413|Johnston Hall 210
2522 E. Hartford Ave.| Milwaukee, WI 53201

EDUCATION

Ph.D., Communication
University of Wisconsin – Milwaukee, Anticipated 2014
 Dissertation: *College Student Lay Health Information Mediary Behavior: An Examination of eHealth Literacy & Unrequested Health Advice*
 Advisor: Mike Allen

Graduate Certificate, Mediation & Negotiation
University of Wisconsin – Milwaukee, 2014

M.A., Communication
University of Wisconsin – Milwaukee, 2011

B.A., Speech Communication
University of Wisconsin – Whitewater, 2006

RESEARCH

AREAS OF SPECIFICATION

Social Influence: Computer Mediated Communication, Media Studies.
Research Methods: Quantitative Methods/Data Analysis (R, SPSS), Rhetorical
 Analysis/Criticism.
Pedagogy: Alternative Pedagogy, Online and Hybrid Course Development.

JOURNAL ARTICLES

Cole, A. W., & Salek, T. A. (in press). Rhetorical voyeurism: Negotiation of literal and rhetorical audience in responses to Kinsey's *Sexual Behavior in the Human Female*. *Journal of Communications Media Studies.*
Allen, M., Bourhis, J., Burrell, N., **Cole, A. W**., et al. (2013). Comparing Communication Doctoral Programs, Alumni, and Faculty: The Use of Google Scholar. *Journal of the Association for Communication Administration, 32*, 55-68.

BOOK REVIEWS

Cole, A. (2012). Book review [Review of the book Emotional intensity in gifted students: Helping kids cope with explosive feelings, by C. Fonseca]. *Mensa Research Journal,*

43(2), 80-81.

CONFERENCE PRESENTATIONS

ACCEPTED PRESENTATIONS
Cole, A. W., Evans, S., Meyers, K. R., Schiappa, E., & Sublett, C. (2014, November). *An examination of MOOCs: Current research and pedagogical concerns and opportunities.* 100th annual convention of the National Communication Association. Chicago, IL.

Cole, A. W. (2014, November). *Online dispute resolution: A review of literature.* 100th annual convention of the National Communication Association. **Top Student Papers in Peace and Conflict.** Chicago, IL.

Cole, A.W., Kim, S-Y., Priddis, D., & Lambertz, M. (2014, November). *Student attrition in online courses and instructor's base of power.* 100th annual convention of the National Communication Association. Chicago, IL.

PREVIOUS PRESENTATIONS
Cole, A. W. (2014, April). *Tweeting Doomsday: Proselytizing for profit through participatory media.* Central States Communication Association Conference. **Top Student Paper – Media Studies.** Minneapolis, MN.

Kim, S., Allen., M., **Cole, A. W**., et al. (2013, November). *Testing the evidence effect of Additive Cues Model (ACM).* 99th annual convention of the National Communication Association. Washington DC.

Cole, A. W., Salek, T. A., & Werner, J. B. (2013, October). *Prescribing action or complacency: A model of cyberchondria as rhetorical action*. InfoSocial 2013 conference of the Media, Technology and Society Program at Northwestern University. Evanston, IL.

Cole, A. W. (2013, April). *"We need empirical evidence": Repatriation rhetoric and the denial of community identity.* Central States Communication Association Conference. Kansas City, MO.

Jackl, J. A., & **Cole, A. W**. (2013, April). *"So when are you going to get married?": Singlism as a form of microaggression.* Central States Communication Association Conference. Kansas City, MO.

Cole, A. W. (2012, October). *Unification within polarity: The third persona and popular culture debates on "marriage material."* Wisconsin Women's Studies and LGBTQ Conference. Oshkosh, WI.

Cole, A. W. (2012, May). *Dividing a shared history: Defining rhetoric within the disciplinary identities of English and communication graduate students.* Conference of the Rhetoric Society of America. Philadelphia, PA.

Bergtrom, G., **Cole, A. W.,** & Russell, M. R. (2012, April). *Future faculty development: How do we prepare them for distance teaching and learning?* Sloan-C Blended Learning Conference and Workshop: Perfecting the Blend. Milwaukee, WI.

Cole, A. W. (2012, March). *Rhetorical voyeurism: Women, audience and enthymeme in responses to Kinsey's "Sexual Behavior in the Human Female."* Central States Communication Association Conference. Cleveland, OH.

Cole, A. W. (2012, March). *Beware the witching hour: 'Dark times' & rhetoric as magic.* Central States Communication Association Conference. Cleveland, OH.

Keith, W. M., Beerman, R. J., **Cole, A. W**., Jackl, J., Rippke, P., Schneider, S., & Yamada, K. (2011, October). *Speaking to a public: Communication and controversy*. 5th Annual Critical Thinking Conference: Critical Thinking and Civil Discourse. Steven's Point, WI.

Cole, A. W. (2011, October). *From fairy faith to UFO cults: A cross-cultural analysis of preternatural belief systems*. Midwest Popular Culture Association and Midwest American Culture Association Conference. Milwaukee, WI.

Cole, A. W. (2011, October). *From indigo children to "Psychic Kids": Examining New Age representations of normalcy in children*. Midwest Popular Culture Association and Midwest American Culture Association Conference. Milwaukee, WI.

Cole, A. W. (2011, April). *Crafting the "Psychic Kid": The empty narrative in contemporary folklore*. Central States Communication Association Conference. Milwaukee, WI.

Herrman, A. R., Maier, M. A., & **Cole, A. W.** (2011, April). *Parental influence on child communication development: Examining the relationship between conjugal and parental power and adult children's assertiveness and conflict management*. Central States Communication Association Conference. Milwaukee, WI.

Cole, A. W. (2010, October). *From "Witch" to "Bitch": The hunt for the misogyny specter in contemporary legend-telling*. Midwest Popular Culture Association and Midwest American Culture Association Conference. Minneapolis, MN.

Cole, A. W. (2010, October). *Getting "Jacked": Considering gender, body image and self-esteem in a college weightlifting community*. Midwest Popular Culture Association and Midwest American Culture Association Conference. Minneapolis, MN.

Cole, A., & Baus, R. (2006, May). *Examining the mind/body connection of a college weight training population*. University of Wisconsin-Whitewater Undergraduate Research Day. Whitewater, WI.

RESEARCH COLLOQUIA
Cole, A. W., Salek, T. A., & Werner, J. B. (2014, May 2). *Prescribing action or complacency: A rhetorical model of cyberchondria.* UWM Department of Communication Professional Development Seminar.

HANDBOOKS

Cole, A.W. (2011). *Teaching with technology: A handbook for teaching assistants*. UWM Learning Technology Center. Available online from http://uwmltc.org/?p=3356

Cole, A. W. (2010). *Company search manual: For use with Dr. Sandra Braman's RFC project*. National Science Foundation funded study "Internet RFCs as social policy: Network design from a regulatory perspective."

<u>HONORS AND AWARDS</u>

- Renee A. Meyers Memorial Scholarship, University of Wisconsin – Milwaukee Communication Department, June 2014.
- Samuel L. Becker Award for Top Graduate Student Paper, Media Studies Interest Group, Central States Communication Association, April 2014.
- Distinguished Graduate Student Fellowship, University of Wisconsin – Milwaukee, 2013-2014.
- Graduate Student Travel Award, University of Wisconsin - Milwaukee Graduate School, April 2014.
- Melvin H. Miller Doctoral Service Award, University of Wisconsin - Milwaukee Communication Department, May 2012.
- Graduate Student Travel Award, University of Wisconsin - Milwaukee Graduate School, May 2012.

- Chancellor's Award, University of Wisconsin – Milwaukee, 2011-2012.
- Honorary Year Membership to NCA in recognition for Departmental Service, 2011-2012.
- Melvin H. Miller Master's Teaching Award, University of Wisconsin - Milwaukee Communication Department, May 2011.
- Golden Key International Honor Society, April 2010.
- Undergraduate Research Grant, University of Wisconsin-Whitewater, 2005.

RESEARCH EXPERIENCE

- Distinguished Graduate Student Fellow, University of Wisconsin – Milwaukee, 2013 – 2014.
- Research Specialist, UW Flex Option Certificate Program in Business and Technical Communications, University of Wisconsin – Milwaukee Department of English, 2013.
- Research Assistant, University of Wisconsin – Milwaukee Department of Communication, 2010.
- Undergraduate Research Program, University of Wisconsin – Whitewater, 2005-2006.

TEACHING EXPERIENCE

- Graduate Teaching Assistant/Instructor of Record, University of Wisconsin – Milwaukee Department of Communication, 2010 – 2014.
- Learning Technology Assistant, University of Wisconsin – Milwaukee Learning Technology Center, 2011 - 2013.
- Substitute Teacher, Palmyra-Eagle Area School District, 2007 - 2009.

COURSES TAUGHT

- Business and Professional Communication (Online)
- Introduction to Conflict Resolution and Peace Studies
- Introduction to Interpersonal Communication
- Public Speaking
- Public Speaking Non-Living Learning Community (aligned with Introduction to College Writing)

WORKSHOPS PRESENTED

- D2L: Just the Basics, 2011-2012.
- Using Online Discussions Effectively, 2012.

CERTIFICATION

- Certificate in Online and Blended Teaching, University of Wisconsin - Milwaukee Learning Technology Center and the Office of the Provost, 2012.

SERVICE

COMMUNITY

- eMentor, In2Books Literacy Mentoring Pen Pal Service, 2010 - present.
- Volunteer and Invited Speaker, Golden Key International Honour Society at UW-Milwaukee Chapter Induction Ceremony, April 22, 2012.
- Tournament Finals Judge, National Christian Forensics and Communication Association Wisconsin Thaw Tournament, Spring 2012.
- Better World Books - Literacy Public Service Volunteer, Golden Key International Honour Society at UWM, Fall 2011.
- Invited Speaker on Weight Loss and Body Image, Whitewater High School, November 2006.

REVIEWER

- Oxford University Press, 2012 - present.
- National Communication Association Annual Conference, 2012 - present.
- Central States Communication Association Annual Conference, 2012 - present.

UNIVERSITY & DEPARTMENT

- Facebook Administrator, UWM Communication Department, Spring 2014.
- Guest Speaker, Using Course Management Systems, UWM Cambridge Residence Hall, September 24, 2013.
- Committee Member, UW-Milwaukee Graduate Scholastic Appeals Committee, 2013 - 2014.
- Course Mentor, Introduction to Conflict Resolution and Peace Studies, 2013 – 2014.
- Peer Mentor to new Ph.D. Students, UWM Communication Department, 2012 – 2014.
- Committee Member, Communication Graduate Student Council, Professional Development Subcommittee, Spring 2013.
- Committee Member, UW Flex Degree UWM Academic Program Leadership Group, 2012-2013.
- Peer Mentorship Coordinator and Mentor for new Master's Degree Students, UWM Communication Department, 2012-2013.
- Guest Speaker, Technology use at UWM, UWM Academic Opportunity Center Bridge Program, July 19, 2012.
- Social Media and Web Presence Designer, Communication Graduate Student Council, Fall 2012.
- Communication Department Volunteer, UW-Milwaukee "Open House," October 26, 2012.
- Volunteer Discussion Leader, UW-Milwaukee Center for Instructional and Professional Development "Common Reading Experience" for Incoming Freshmen, August 31-September 1, 2012.
- Virtual Session Chair, Sloan-C Blended Learning Conference and Workshop: Perfecting the Blend, April 2012.
- MA Veteran Facilitator, Communication Graduate Student Council Portfolio Workshop, March 2012.
- Committee Member, UW-Milwaukee Provost Search & Screen Committee, 2011-2012.
- President, Communication Graduate Student Council, Fall 2011.
- Vice President, Rhetoric Society of America Student Chapter at UWM, Spring & Fall 2011.
- Semi-Finals Judge, UW-Milwaukee Public Speaking Showcase for Undergraduate Public

Speaking Students, 2010-2013.
- Committee Member, Teaching and Learning Committee, UW-Milwaukee Digital Future Charge, 2010-2011.
- Technology Consultant, Communication Graduate Student Council of UWM, Fall 2009.

MULTIMEDIA PROJECTS

- "A Brief Introduction to Desire2Learn v.10,"Instructional Video, UWM Learning Technology Center, June 2012.
- "Dealing with Resident Behaviors in Caregiving" Employee In-service Video, Fairhaven Retirement Community, September 2010.
- "Resident Rights" Employee In-service Video, Fairhaven Retirement Community, September 2009.
- "Y2K6" Visual Art Project, University of Wisconsin-Whitewater Cross-Cultural Communication Courses, Summer Session 2006.

PROFESSIONAL MEMBERSHIPS

- National Communication Association
- Central States Communication Association
- Rhetoric Society of America

REFERENCES

- Mike Allen, Professor
  - Department of Communication, University of Wisconsin-Milwaukee
  - Phone: (414) 229-4261 | E-mail: mikealle@uwm.edu
- Nancy Burrell, Professor
  - Department of Communication, University of Wisconsin-Milwaukee
  - Phone: (414) 229-2255 | E-mail: nburrell@uwm.edu
- William Keith, Professor
  - Department of English, University of Wisconsin-Milwaukee
  - Phone: (414) 229-5828 | E-mail: wmkeith@uwm.edu
- Sang-Yeon Kim, Assistant Professor
  - Department of Communication, University of Wisconsin-Milwaukee
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