COLLEGE STUDENTS' HEALTH-SEEKING BEHAVIOR PLANS IN RESPONSE TO IMAGINED ABDOMINAL PAIN

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ABSTRACT OF THE THESIS

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Patient delay has been shown to be an important antecedent of mortality and medical complications. To design interventions to decrease delay it is imperative to understand the complex decisions and actions involved in the multifaceted process of health-care-seeking behavior. We used a simulation, i.e., asking participants how long they would wait to take specific actions if experiencing moderate abdominal pain, as an initial step to examine the sequences of responding and to gain insight into the processes underlying these decisions. Anticipated latency to specific actions, e.g., using a home remedy, communicating with family or friends, and seeking professional care, was investigated. We explored gender and health anxiety relations with anticipated action latencies as well. In addition to examining delay for oneself, we examined the advice the respondents would give to a friend facing an identical scenario. Participants were undergraduates from Rutgers University (n=145) who completed an online questionnaire including abdominal pain health scenarios. Overall, latencies were shorter to take OTC medications or talk to someone about symptoms than to seeking a health care professional and the most common behaviors reported were resting or waiting (31.1%), followed by taking OTC medication (22.7%), seeing a healthcare professional (18.2%), and taking a home remedy (11.4%). Consistent with hypotheses, higher health anxiety scores were

associated with shorter anticipated latencies to take OTC medications or home remedies (B=-.07, SE=.032, Wald X^2 (1)=4.81, p=.028). Additionally men anticipated longer latencies to taking any action than did women (B=.66, SE=.32, Wald X^2 (1)=4.08, p=.043), as hypothesized. Comparing self-described action with advice to a friend, showed that respondents were more likely to advise friends to take OTC medications (X^2 (1)=3.58, p=.059), but were less likely to advise friends to seek professional care, relative to their self-care plans (X^2 (1)=12.42, p=.000). Implications of these findings are discussed.

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Table of Contents

List of Tables

List of Figures

Introduction

Responses to symptoms differ greatly on an individual level (Mechanic, 1983); some individuals respond promptly and others delay. People experience and ignore symptoms regularly, seeking help less than 8% of the time (Bishop, 1984). Reacting quickly to a potential health threat can have profound benefits to one's health. Conversely, delaying care and diagnosis can increase the likelihood that extensive medical care will be needed. Thus, understanding the factors affecting patient delay is an important issue for public health policies.

This study seeks to investigate how people respond to health risks in everyday life. Specifically, our aim is to have participants respond to abdominal pain scenarios in order to shed light on patient delay for specific types of health-seeking behavior (e.g., taking any action, using a home remedy, communicating to friends or family members about symptoms, and seeking professional care). We also examine the role of communication as a health-seeking response. We study the effects of gender and health anxiety, as possible predictors of anticipated health-seeking behavior. Finally, we investigate potential differences in what an individual would prescribe for him or herself as compared to what they would advise a friend given the same abdominal pain.

Importance of Reducing Patient Delay

Health outcomes could be improved for many medical conditions if patient delay was reduced. Cancer is one example where decreasing this delay is imperative. Specifically, lung cancer is a very deadly and common cancer that can have improved prognoses with early surgical excision (Salomaa, Sällinen, Hiekkanen, & Lippo, 2005); yet, because of delays in diagnosis, only 20% of lung cancer patients qualify for a

curative procedure. Decreasing patient delay and time to diagnosis would increase benefits from surgical treatment and improve health outcomes (Henschke, McCauley, Yankelevitz, et. al., 1999; Salomaa, Lippo, Taylor et al., 1998). The situation is similar for breast cancer. Arndt and colleagues (2002) sampled female breast cancer patients to examine patient delay; 18% waited longer than three months to consult a physician. The authors concluded that a significant amount of late stage diagnoses could be prevented if patient delay for breast cancer was reduced to less than one month (Arndt et al., 2002).

Appendicitis provides another example of a highly treatable condition when given immediate attention. Perforation in adults can occur within 36 hours of symptom onset and can significantly increase complications and mortality (Chung, Ng & Lai, 2000). Patients often confuse symptoms of appendicitis with "stomach flu" or "food poisoning" which contributes to delay. Postponing treatment has been found to be the main cause of perforation, increased complications and longer hospital stays for appendicitis (Chung, Ng & Lai, 2000). Additionally, Bunde & Martin (2006) analyzed reasons for delayed care seeking with myocardial infarctions (MI). As expected, the authors found that history of MI, sweating, the location of pain in the arm and chest, and its severity reduced delay in care seeking because these somatic changes matched the illness prototype for MI. In contrast, two somatic changes that increased delay were gastrointestinal problems, and sleep disturbance or fatigue (Bunde & Martin, 2006). This delay can be explained by the misperception of these symptoms. These health issues are only a few of many that could have improved outcomes with reduction of delay in care seeking. In order to target delays, it is essential to gain insight into the complex process of health-seeking behavior. Understanding patient delay, is important for developing programs such as those

designed to speed care seeking to treat serious conditions in their early stages, and to those aimed at prevention and health promotion.

A Dynamic Process

The Common Sense Model (CSM) posits that health decisions and actions are outcomes of a dynamic process in which people, as active problem solvers, constantly assess their somatic states both automatically and deliberatively (Leventhal et al., 2011). The CSM framework points to important transitional moments in the sequence from detecting a somatic deviation to action. The six main steps in the process include: 1) a stimulus disrupts the somatic state, 2) the somatic state is appraised, 3) a health threat is assessed, 4) a coping response is activated, and 5) the somatic state is reappraised, 6) the coping mechanisms are evaluated (Leventhal, Herold, Leventhal, Burns, & Diefenbach, 2015). Problem solving begins when an individual detects a change in their somatic state and interprets the deviation as a threat by comparing and matching it to an illness schema in their knowledge base (Bishop, 1984). Health-seeking is activated if the deviation is severe, i.e., extremely painful, long lasting, disruptive (Cameron, Leventhal & Leventhal, 1993; Leventhal, et al., 2011; Hyams, Burke, Davis, Rzepski & Andrulonis, 1996; Talley, Boyce & Jones, 1997), or novel (Mora, Robitaille, Leventhal, H., Swigar, Leventhal, E., 2002). Once the somatic change is defined as a threat, the individual may choose to ignore the change, i.e., interpreting it as benign or temporary, or to take action, i.e., talking to a friend or family member, using a home remedy, or seeking professional care (Leventhal et al., 2011). Although the CSM has been studied in a wide array of clinical

populations, these settings are often less suited for detailed analysis of the underlying appraisal process. The current simulation attempts to examine these processes in prospective and controlled, though admittedly artificial, conditions.

Predictors of Health-Seeking Behavior

Individual characteristics including gender and health anxiety have been shown to influence health-seeking behavior. Data supports that women tend to have greater pain sensitivity (Fillingim, King, Ribeiro-Dasilva, Rahim-Williams & Riley, 2009), and lower pain tolerance (Robinson & Wise, 2003) than men. Additionally, women use healthcare services more often than men (Owens, 2008). Specific to the current study, in general women have a higher prevalence of abdominal pain (Gerdle et al., 2008; Picavet & Hazes, 2003), as well as irritable bowel syndrome (IBS; Sandler, 1990), and chronic abdominal pain (Hardt, Jacobsen, Goldberg, Nickel & Buchwald, 2008). Women seem to be more sensitive and experience pain more readily than males, while men have been shown to avoid and ignore health symptoms. Sharpe and Arnold (1998) conducted a study on the health seeking behavior of men (n=760). Overall, the data showed a consistent trend of men avoiding seeking help and ignoring health symptoms. The qualitative data from the questionnaire revealed that the majority of men agreed with statements such as: “minor illness can be fought off if you don’t give into it,” “I often ignore symptoms hoping they will go away,” and “I have to be really ill before I go to see a doctor.” These statements are consistent with literature that supports that delays in health seeking can be explained by the mentality of “traditional masculine behavior”

(Galdas, Cheater & Marshall, 2004; Mansfield, Addis & Mahalik, 2003). Interestingly, Himmelstein & Sanchez (2014) found that masculinity, regardless of gender predicted barriers to help seeking. Overall, literature shows that women have a higher prevalence and lower tolerance of pain, and males delay care seeking more so than women.

Health anxiety is another major factor that has been shown to predict health-seeking behavior (Barsky, Ettner, Hursky, & Bates, 2001; Salkovski &Warwick, 2001). Individuals with greater health anxiety are more likely to seek out online health information, make more medical appointments, (Eastin & Guinsler, 2006), and have greater healthcare costs (Asmundson, Taylor, Sevgur & Cox, 2001; Barsky, Ettner, Horsky & Bates, 2001; Hiller, Fichter, & Rief, 2003). The current study seeks to expand the findings on health anxiety and gender and anticipated actions to address abdominal pain. We hypothesize that women, and individuals with greater health anxiety will report shorter delays to take any initial action, take OTC medication or home remedies, talk to someone about symptoms, or see a healthcare professional, as well as report plans to communicate to more individuals about symptoms.

Communicating Symptoms to Others

Examining cognitive, emotional and behavioral processes at the individual level is only one aspect of the health-seeking process; other critical determinants lie in the social context. Communicating health problems is an essential part of health-seeking behavior that can provide a source of reassurance for individuals (Edwardson, Dean & Brauer, 1995), and even have lifesaving benefits (Finnegan et al., 2000). Finnegan and colleagues (2000) conducted focus groups in five different US regions to investigate personal perspectives of patient delay and heart attacks. An important finding from the focus

groups was that the majority of survivors were with others during symptom onset, and were convinced by the concerns and urges of others to take action and pursue care. Surprisingly, most participants claimed that the bystanders were the ones who called 911 or persuaded them to get to hospital (Finnegan et al., 2000; Johnson; 1991). As this evidence illustrates, communication can be a very valuable health-seeking step that can have significant positive implications for health outcomes. Unfortunately, however, there is much to learn about the role of communication in care seeking. We know people seek the advice of others and that people also give health advice (Brashers, Goldsmith & Hsieh, 2002). Cameron, Leventhal & Leventhal (1993) suggest that elders communicate symptoms as a desire to seek encouragement. The present study aims to examine the role of communicating to others as a health-seeking behavior in young adults. Specifically we will study how quickly individuals anticipate communicating with others about a simulated symptom, how many people they intend to speak with, and whether gender or health anxiety predict these intentions.

Another question of interest is whether individuals have different thresholds for care seeking for themselves than they do for others. To our knowledge there is no empirical literature on health-seeking behavior that examines the comparison of what individuals would do for themselves as opposed to what they would advise another person to do given the same somatic situation. Given the findings from Finnegan and colleagues (2000) that the majority of heart attack survivors were urged by the concerns of others to seek out medical attention, we would expect that others might be more aggressive with their recommendations when it comes to appraising another's symptoms. There is however, literature on interpersonal perspective taking, which suggests that

when making predictions for others, people first make predictions for themselves and then fill in the gaps based on individual differences (Lowenstein, 2005). Evidence supports that individuals tend to unintentionally predict exactly the same for themselves as they do for others (Van Boven & Loewenstein, 2003). The current study intends to elucidate this unanswered question by examining an initial response to imagined abdominal pain and comparing it with advice they would give to a friend with the same level of pain.

Abdominal pain

In the present study, abdominal pain will be the target symptom as it is highly prevalent in college students. A study of symptom prevalence showed that nearly 24% of 18 to 39 year old adults reported abdominal pain in the prior month (Sandler, Stewart, Liberman, Ricci & Zorich, 2000) and the rates were higher at all ages for women (24.4%) than men (17.5%). Moreover, 65% of those who endorsed abdominal pain rated it as moderate to severe (Sandler et al., 2000). Given its frequency in young adults, abdominal pain provides a set of symptoms that college students are likely to have had experience with; and, they can draw upon to answer questions when imagining abdominal pain.

In addition to high prevalence, abdominal pain varies and can have multiple possible causes, minor, e.g., upset stomach, stomach virus, moderate, e.g., food poisoning, and severe, e.g., appendicitis, colon cancer. Thus, abdominal distress allows multiple interpretations and self-management behaviors, e.g., household remedies, speaking to others, and self-referral. The frequency of abdominal pain in a young adult population also has implications for increased healthcare utilization and absence from school (Roth-Isigkeit, Thyen, Stöven, Schwarzenberger, & Schmucker, 2005).

Additionally, it can be ignored, as it is not visible, and is frequently intermittent. These factors make abdominal pain the selected focus for the experiment.

Objectives

Respondents were asked to imagine what they would do if they experienced a constant, abdominal pain (level 4 on a 10 point scale) then prompted to answer when they would take action for three types of health-seeking behaviors: 1) take an over-the-counter (OTC) medication or a home remedy, 2) talk to someone about symptoms, 3) see a healthcare professional. We will examine reported time to take action for the different behaviors, and if anticipated action latencies differ as a function of the respondents' health anxiety and gender. Participants also reported whether they would communicate about these symptoms to another person and, if so, who that might be. We will examine whether these intentions are influenced by participant characteristics (health anxiety, gender). We will also assess whether responses for themselves are different from those they would advise for a friend experiencing similar somatic cues.

Our expectations of responses to self-experienced pain are as follows:

1) Delay is expected to vary by type of response such that use of a home remedy or an OTC medication will occur more quickly than speaking to another, and both will occur more quickly than seeking professional care.
2) Women and individuals with higher health anxiety scores will respond similarly by reporting faster response times for each of the four types of behaviors: a) take any action; b) take an OTC medication or an alternative remedy; c) talk to a someone; and d) see a healthcare professional.

3) In addition, we anticipate that women and individuals higher in health anxiety will report intent to speak to a wider array of individuals, e.g., roommates, friends, and family members.

A second set of hypotheses address the differences between responding to a constant pain of level 4 for one's self, and the advice given to a friend experiencing that level of pain. Given that an individual will be more familiar with how they experience abdominal pain than a friend would; we would expect that for the friend scenario individuals' uncertainty would result in more proactive health seeking advice. We would expect:

1) There would be more recommendations to wait in the self-scenario.
2) More frequent recommendations to seek professional care for the friend than for self.

Methods

Participants

A total of 145 Introductory Psychology Students from the New Brunswick Campus of Rutgers University participated in the study. The sample varied in size (n= 145 to n = 106) for different outcomes due to failure to respond and/or ambiguous responses that could not be coded. Their average age was 19.46 years (SD=1.67) with a range of 18 to 31 years of age. The sample was diverse in terms of race and ethnicity and comprised slightly more men than women and more underclass than upper-class persons. Please see Table 1 for details regarding sample demographics. Although, participation was voluntary, course credits were given (.5 credits for 30 minutes) following participation. Participants were also informed that they could quit the study at any time, and that they could opt out of any item if they preferred not to answer. Participation

consent was administered online, prior to the completion of the survey, in accord with the IRB-approved protocol.

Procedures

The 30-minute (approximate) online questionnaire contained both closed, and open-ended questions addressing: demographics, cultural orientation, self-assessed health (SAH), medical history, healthcare utilization, the health scenarios, health self-efficacy (HSE), and the short health anxiety index (SHAI). Analyses for the current report use only the demographic, health scenarios, and health anxiety index (SHAI) measures. The complete questionnaire is in Appendix A.

Demographics. Opening questions addressed age, gender, ethnicity, and self and parents' education followed by a brief medical history (individual and family), similar in content to standard medical intakes (see Appendix A for items). Prior utilization of care, e.g., number of conditions and hospitalizations, and participants' willingness to use medication was also assessed. These responses provide background information on a participant's general health behavior.

Health Scenarios. The initial scenario presented a fairly low level of pain (e.g. level 2 on the 10-point scale). Our analyses focus on two of the five scenarios that followed, the first asking participants to imagine how they would respond to a constant abdominal pain of 4, and a second that asked how they would advise a friend experiencing the same level-4 pain. The Wong & Baker Faces Pain Scale (1983) was used to convey pain severity (see *Figure 1)*. The Faces Pain Scale appeared on screen with each health scenario in order to orient the participant to the different pain levels from 0-10. This scale allows participants to better understand pain levels using expressive

faces as well as numeric values. This scale, validated in child and geriatric populations (Garra et al., 2010; Stuppy, 1998), is designed to reduce individual differences in pain reporting. Physicians commonly use it to evaluate pain experienced by patients.

After responding to the mild pain, practice scenario the respondent viewed the target scenario with constant pain level-4 and was asked to imagine abdominal pain at this level and respond to the following questions (see Table 2 for specific questions).

Responses were coded for quantitative analysis, e.g., responses to "how long would you wait to do something about it?" were firstly coded into hours. When a range was given we took the midpoint. Then the distribution was examined and the durations were coded into four categories [1) within two hours; 2) greater than two hours and no more than 12 hours; 3) greater than 12 hours and no more than 35 hours (there were no responses between 25 and 35 hours, however); and 4) 36-hours and above]. The same categories were used for each of the following: a) time to take OTC or home remedy, b) time to speak to someone about symptoms, and c) time to see a healthcare professional (see distributions in Table 3).

Additional coding was conducted for the open-ended responses to the question, "Who would you discuss this with?" were coded into eight exhaustive categories (see Appendix B for the coding scheme), including: mother, father, unspecified parent, sibling, unspecified family, roommate, partner, and doctor. After coding, a total score was calculated for each participant that sums the total different domains reported. It was not possible to clearly code the total number of individuals listed due to ambiguity in responses (e.g., roommates, friends). As such, we were limited to coding the number of social roles/domains reported by participants.

Participants completed free response items regarding what they would do in the face of constant level-4 pain, and separately, what they would advise a friend to do in the same situation. Sample responses are shown in Table 5. These free responses were coded into nine exhaustive categories that designate a specific action-type: 1) rest or wait; 2) use the restroom; 3) check the internet; 4) home remedy; 5) OTC medication; 6) talk to someone; 7) see a healthcare professional; 8) go to the ER/hospital; 9) other. It is important to note, that because of the complexity of the responses, only the first action type mentioned was coded, and not all the actions reported. For example, some individuals listed several actions (e.g., "I would use the bathroom then try to nap and see if the situation improves"), some of which may have been conditional on the outcomes of the first action. Two trained raters separately coded the data (see Appendix C for coding scheme details). The kappa statistic was used to calculate inter-rater agreement. In an attempt to reach complete agreement the coding scheme was revised to clarify ambiguities and discrepant cases were re-rated by both raters. After the second attempt the cases were in complete agreement (K= 1.0).

Health-Related Anxiety was assessed with the 18-item Health Anxiety Index (SHAI) (Salkovskis, Rimes, Warwick, & Clark, 2002); a brief version of the original 64-item Health Anxiety Index. The SHAI has good reliability ($\alpha = .81$), and high internal consistency ($\alpha = .89$), and has been judged as clinically useful for assessing health-related anxiety independent of physical status (Salkovskis, Rimes, Warwick, & Clark, 2002). The scale had good internal reliability in the current study ($\alpha = .84$). Participants select one of each of four sets of responses that best describe their feelings over the past 6 months, e.g., 1) I do not worry about my health, 2) I occasionally worry about my health

3) I spend much of my time worrying about my health 4) I spend most of my time worrying about my health (see Appendix A; scored 0,1,2,3 respectively and summed across items). Total scores range from 0 to 54. Salkovskis, Rimes, Warwick, & Clark, (2002), tested the validity of the SHAI in a variety of different populations and found an average score of 37.9 (SD=6.8) for health anxiety, 18.5 (SD=7.3) for general anxiety, 12.2 (SD=6.2) for the control population.

Results

Descriptive statistics provided an overview of participants' responses to each of the imagined pain scenarios. Response times for taking any action were fairly evenly distributed from acting within 2 hours to waiting more than 36 hours from the self-scenario (constant pain of 4 out of 10) (see Table 3). The second question in the self-scenario asked the participant "what would they do?" as their initial first step. The most frequent answer involved resting or waiting (31.1%), followed by taking OTC medication (22.7%), seeing a healthcare professional (18.2%), and taking a home remedy (11.4%). After determining the first action they would take in this health scenario, we then examined reported response times for a series of specific health-seeking behaviors given the same somatic representation. The majority 50.4%, reported that they would take an OTC medication or home remedy within two hours, 44.2% indicated that they would talk to someone about their symptoms within 2 hours. In contrast, 58.3% reported that would wait 36 hours or more to see a healthcare professional.

We then tested whether taking a home remedy or OTC medication would be done most quickly, and seeing a health professional least quickly. We expected latencies of time to talk to someone to be shorter than latencies to see a healthcare professional, and similar to or slightly longer than using a home remedy or OTC medication because

communication with others is dependent on others' availability. Chi square analyses revealed that the anticipated latency to take a home remedy or OTC medication was significantly shorter from the time reported to see a healthcare professional $X^2(3)=91.336$, $p<.001$. Specifically, 50.4% of the sample would take a home remedy or OTC medication within 2 hours; in comparison, 58.3% of the sample would wait more than 36 hours to see a healthcare professional. Anticipated latency to talk to someone about symptoms was also significantly less than latency to see a healthcare professional ($X^2(3)=68.596$, $p<.001$). Latency to talk to someone was not significantly different than time to take an OTC or home remedy ($X^2(3)=3.775$, $p=.287$).

Ordinal logistic regression analysis was used to determine if gender and health anxiety, as measured by total SHAI score, predicted latency to take action for each health seeking behavior type. The assumption of proportional odds was not violated in the analyses. Including gender and health anxiety in the same model reduced power due to the high number of participants who failed to complete the SHAI scale at the end of the questionnaire (see Table 1). Thus, gender and SHAI were run in separate models (see Table 2 for findings). Bivariate correlational analysis was also conducted between gender and total SHAI score and a moderate positive correlation was found ($r(103)=.248$, $p=.011$).

Men were more likely to delay taking any action than were women. Gender was not a significant predictor for latency of taking a home remedy or OTC medication, talking to someone about symptoms, seeing a healthcare professional, however. The gender difference only emerged in the free-response item.

Health anxiety was significantly related to latency to use OTC or home remedies, such that individuals higher in health anxiety reported that they would use these remedies more quickly than would less anxious individuals. Health anxiety was not significantly related to anticipated latency to any other behavior.

Although, gender and anxiety scores did not predict latency to talking to someone about symptoms, we wanted to further examine whether anxiety or gender were associated with individuals reporting a plan to talk with a greater number of social domains, and who was the most likely target for communicating about symptoms. Participants named a variety of individuals when asked, "Who would you discuss this with?" and *Figure 3* illustrates the various social domains identified. Participants most frequently reported that they would communicate with their mother (n=89), followed by friend (n=54), and father (n=33). The total number of unique social domains per participant was calculated and it ranged from 0 to 6 (n=131, M=1.81, SD=1.17). In order to determine if anxiety or gender were associated with a greater number of social domains, preliminary bivariate correlation analyses were conducted. There were no significant associations between health anxiety and gender and the number of social domains mentioned for reporting symptoms (health anxiety: $r(100)=.006$, $p=.956$; gender: $r(128)=.101$, $p=.254$).

Finally, we compared communication for oneself with advice given to a friend experiencing the same level of abdominal pain, 4 on a 10-point scale (sample qualitative responses are shown in Table 5. Resting or waiting was the most frequent form of advice (33.3%), followed by taking OTC medication (32.5%), a home remedy (12.2%), and seeing a healthcare professional was least likely (9.8%). We examined whether there

were significant differences between what an individual would report as a first step for him or herself and as advice given a friend.

The content, coded in nine different categories (coding details can be found in Appendix C), revealed several differences between self and recommended responses (Figure 4). Most notably, and contrary to our hypothesis, 70.8% of the participants who said they would seek out a health care professional for themselves, ($X^2(1)=12.42$, $p<.001$; n=121), did not give the same advice to their friend. However, participants were less likely to endorse taking medication themselves than to advise a friend to do so. Findings revealed that 28.7% of the individuals who did not endorse taking OTC medications for themselves, recommended them to a friend ($X^2(1)=3.58$, $p=.059$; n=121). As shown in Figure 4, the most common responses were to rest or wait (self: 31.1%, friend: 33.3%) followed by the second most frequent taking OTC medication (self: 22.7%, friend: 32.5%). However, the third and fourth most common responses were flipped (taking a home remedy: self: 11.4%, friend: 12.2%; seeing a healthcare professional: self: 18.2%, friend: 9.8%). Also, in the friend-advice scenario, 0% of the sample recommended that the friend speak to someone else about his or her symptoms, as opposed to the 3.8% in the self-scenario example.

Discussion

The purpose of this study was to examine young adults' anticipated plans to manage and seek care when faced with hypothetical abdominal pain. Free responses to a standardized abdominal pain scenario were collected and coded to capture behavioral action plans and anticipated latencies for the self and for a friend in the same situation. The objective of the approach was to reveal the steps preceding self-management actions that are likely

absent in retrospective reports commonly obtained in studies of decisions for self-care or use of formal care. Responses ranged from passive approaches (e.g., waiting, resting) to active and immediate care-seeking (e.g., going to the emergency room) and differed as a function of gender, health anxiety, and the affected individual (self vs. friend). Latencies to action varied by type of action, such that respondents anticipated shorter latencies to home remedy and over-the-counter medication use and communication with others than formal care seeking.

The first aim of the study sought to identify a health-seeking behavior sequence. We hypothesized that young adults would report short delays to use of home treatments, longer delays to communicating with others, and still longer delays to seeking health care. In support of this hypothesis, the latencies to use of a home remedy or OTC medication and to talking with others about symptoms were significantly shorter than latencies to seeking formal health care. This makes sense, as there are delays inherent in the health care-seeking process (e.g., the time it takes to make an appointment, the availability of providers, transportation) that are not inherent to the other actions assessed. However, there was no significant difference in latencies between taking a home remedy or OTC medication versus talking to someone about symptoms. There are several potential explanations of this finding. One is that, given the moderate nature of the imagined pain, both of these actions might potentially serve the same purpose for individuals. Just as one takes a pill for quick relief, one might talk to a friend for reassurance or validation, which would also provide fast relief. Furthermore, some people may be more likely to utilize interpersonal relationships for guidance, while others might be more willing to use medications. When examining the participants' first action

when faced with hypothetical abdominal pain (level 4), the most common response was resting or waiting, followed by taking OTC medication, seeing a healthcare professional, and taking a home remedy. Talking to someone about symptoms was only mentioned as a first step by 3.8% of participants. Perhaps, this could be because people do not think of communicating as a first point of action. Post hoc analysis revealed that regardless of the order, 9.1% of responses mentioned communicating symptoms in their response. Overall, this could be underreported because individuals might communicate about symptoms without even thinking about it as a way to improve health. Furthermore, when interpreting these findings it is important to note a limitation of the design of this study. The questions in the health scenarios were asked in an order that reflected a sequence of: taking any initial step, taking medication or a home remedy, talking to someone, and seeking a healthcare professional. The data analysis of the sequence only involved the first health scenario, which reduces the potential for order effects as they were only exposed to this order as they were going through it the first time it was asked.

The second aim of the study was to investigate whether gender predicts patient delay. Akin to the conclusions of the literature review by Galdas, Cheater & Marshall (2005) the current study showed that men were more likely to wait to take a first action than women. Although, males were more likely to delay their first point of action, when prompted for more specific actions (e.g., taking a home remedy or OTC medication, talking to someone about symptoms, seeing a healthcare professional) there was no gender effect. It is of interest why men were more likely to delay when asked generically "what would you do" but when prompted with, "how long would you wait," to take a specific action (e.g. take an OTC medication or home remedy, talk to someone, or see a

healthcare professional) there was no difference between genders. The findings from Sharpe & Arnold (1998) suggest that the majority (52%) of the all male sample agreed with the idea that "I often ignore symptoms hoping they will go away." But, perhaps by asking them specifically how long they would wait to take a specific action this might have signified that this action was expected and appropriate. Perhaps the question itself was enough to reassure the participants that the specific action was justified for this pain. Another possible explanation for the lack of gender differences for specific actions could be due to the higher prevalence of abdominal pain (Gerdle et al., 2008; Picavet & Hazes, 2003) in women. With greater familiarity of abdominal pain, perhaps women view moderate abdominal pain as benign or more tolerable than pain in other areas. Thus, the location of the pain could potentially explain the lack of support for gender difference.

Additionally, we explored the role of health anxiety on delay to take action. Indeed, we found that the higher the health anxiety scores the more likely the participant are to take OTC medications or home remedies earlier. Responding more quickly by taking an OTC medication or home remedy could be a form of reassurance, in order to alleviate the pain temporarily, and avoid distressing thoughts. However, in conflict with our hypothesis health anxiety scores did not significantly improve the predictability for time to take any action, talk to someone, or see a healthcare professional. The absence of these relationships between health anxiety and latency to act is not surprising as the range of SHAI scores in this sample is 1 to 43 (M=15.37; SD=7.06), which left few participants with scores greater than the cut off (37.9) specified for clinically relevant health anxiety. Perhaps, if the health anxiety scores in the sample were more extreme these differences might be visible.

Our next goal was to closely examine the role of communication as a health-seeking behavior and to identify whom individuals intended to talk to about health concerns. As one would expect for a college sample, the findings revealed that the majority of individuals most frequently reported their mother as being someone they would talk to about symptoms. The second most frequent response was a friend. Contrary to the experimental hypotheses, gender did not have a significant association with how many social domains were listed when asked with whom they would communicate symptoms. One of the reasons this could have occurred is because of the frequency of abdominal pain in women. The assumption that it was just ordinary monthly abdominal pain perhaps reduced the desire to talk about it with someone else. For men we would anticipate them to report fewer social domains in accordance with traditional masculine behavior, however, perhaps with women viewing this pain as routine we did not see the findings we expected.

Also in contrast to the experimental hypothesis, higher health anxiety scores were not significantly associated with reporting a greater number of social domains. We know from the findings of our current study that higher health anxiety scores predicted taking OTC medications or home remedies earlier, however this relationship was not evident for seeking out a healthcare professional. Perhaps taking medication is a more reliable source of reassurance seeking than communicating. In order to shed light on these findings, future research should identify the utility of the conversation, and the goals behind communicating symptoms, as there can be different or multiple goals for each point of contact (i.e. reassurance seeking, validation, guidance).

Finally, our aim was to look at differences in individuals' intentions for self-oriented health-seeking as compared to advice they would give to a friend. Given the evidence that the majority of heart attack survivors were urged by the concerns of others to seek out medical attention (Finnegan et al., 2000), we hypothesized that individuals would be more proactive when it comes to appraising another's symptoms. Our findings were surprising in that individuals were more likely to advise their friends to take OTC medications, and to seek out a healthcare professional for themselves. Given the preliminary nature of these results, further research is needed to validate this finding and to better understand the meaning behind these recommendations. In the friend-advice scenario, 0% of the sample recommended that the friend speak to someone else about his or her symptoms, as opposed to the 3.8% in the self-scenario example. One explanation of this is that it would seem rational that the first piece of advice someone tells his or her friend would not be to go talk to someone else. Additionally, communicating with others could have come up as a secondary or tertiary response to this question, but only the first action was coded. This discrepancy is of interest because the most frequent response for talking to someone about symptoms was "mom," but it was not advised even once as a first step when giving recommendations to a friend.

The design of this study has several limitations worth noting. Firstly, the study uses a small sample size drawn from a pool of undergraduate students and may not generalize to other populations. Also, the data collected from the questionnaire were subject to potential self-report biases. In addition, roughly a quarter of respondents stopped responding during the 20-30-minute survey. Although, the researchers attempted to keep the questionnaire as brief as possible, missingness was an issue. Another

shortcoming in the design of this study was that the constant pain scenarios were not randomized, and thus it is possible that individuals became fatigued after the first couple of scenarios and paid less attention towards the end with the final friend advice scenario. Although, the friend advice scenario was intentionally placed last so that enough distraction could take place in order to forget the original self-scenario. We also recognize limitations in our coding, such that we only coded the first response for what they would do, or recommend to a friend. As a result, the full picture of the qualitative response was not captured.

Summary

In conclusion, we acknowledge the limitations of our study and look to future research to replicate these findings with tighter control and improvement of experimental design. It is also of interest to elucidate the role of communicating as a health seeking behavior, our study presented evidence, which may be interpreted as a lack of awareness of the role of communication in pursuit of improving health. Future research is needed to identify the utility of communicating symptoms in younger adults, and whether it is used with any intent to improve health. As well as extending our findings on differences between what an individual would endorse for themselves but not for others.

Overall, reducing patient delay is an important research initiative that improves future health outcomes. In order to target patient delay it is imperative to gain a better understanding of health-seeking behaviors, how, when and why they are used. This understanding will help to promote effective health-seeking behavior and reduce time between onset of critical symptoms and diagnosis.

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Table 1. ***Demographics of Study Sample.***

Factor	*N*	*%*
Gender (n=145)		
Male	83	57.2
Female	56	38.6
Other	1	0.7
Ethnicity (n=145)		
American Indian or Alaskan Native	3	2.1
Asian or Pacific Islander	43	29.7
Black or African American	22	15.2
Hispanic or Latino	19	13.1
Caucasian	56	38.6
Prefer not to answer	6	4.1
Other	6	4.1
Class Standing (n=145)		
Freshman	84	57.9
Sophomore	27	18.6
Junior	18	12.4
Senior	10	6.9
Prefer not to answer	1	0.7
Highest level of Education Mother (n=145)		
Some high school, no degree	8	5.5
High school degree or equivalent	30	20.7
Some college, no degree	15	10.3
Associate degree	9	6.2
Bachelor degree	52	35.9
Graduate degree (Masters level)	16	11.0
Doctoral (PhD, JD)	2	1.4
MD	2	1.4
Prefer not to answer	5	3.4
Other	1	0.7
Highest level of Education Father (n=145)		
Some high school, no degree	12	8.3
High school degree or equivalent	30	20.7
Some college, no degree	14	9.7
Associate degree	8	5.5
Bachelor degree	41	28.3
Graduate degree (Masters level)	17	11.7

Doctoral (PhD, JD)	5	3.4
MD	2	1.4
Prefer not to answer	7	4.8
Other	2	1.4

Factor	*N*	*Mean ±SD*	*Range*
Age	140	19.46±1.67	(18-31)
Health Anxiety Score (SHAI)	106	15.37±7.06	(1-43)

Table 2. ***Health Scenarios***

Health Scenarios

Self-Scenario

- *Imagine you are experiencing all over abdominal pain of 4 on the scale shown above, how long would you wait to do something about it? (please express your answer with a number and indicate minutes, hours, days; e.g. 3 hours)*
- *Given the scenario above what would you do?*
- *Imagine you are experiencing all over abdominal pain of 4 on the scale shown above, how long would you wait to take an over the counter medication (e.g. Tylenol, Advil, etc.) or use an alternative remedy (e.g. herbal tea, acupuncture, etc.) to make you feel better?*
- *If you decided to use a remedy or medicine for this pain, what would it be? (if several, please list all)*
- *If you are experiencing all over abdominal pain of 4 on the scale shown above, how long would you wait to talk to someone about your symptoms?*
- *Who would you discuss this with (e.g. friend, mother, brother, etc.)? Please list all.*
- *What would a family member (or close friend) tell you to do if you felt this way?*
- *If you are experiencing all over abdominal pain of 4 on the ten point scale shown above, how long would you wait to see a healthcare professional about your symptoms?*
- *If you were to see a healthcare professional for this abdominal pain, where would you go?*
- *If you experienced this pain in real life, would you have some idea as to what it might be? If yes, what do you think it could be (your diagnosis)?*

Friend-Scenario

- *Imagine a close friend says the following to you before going to class: " I woke up this morning and felt all over pain in my stomach. I felt about a pain of 4 (out of 10, on the pain scale below). Since I have so much to do today I am trying to tough it out and get my work done. What do you think?"*
- *What advice would you give your friend? (please be as detailed as possible)*
- *What is your friend's gender? (the friend you are giving advice to in this situation)*
- *Is there any other information you would have wanted to ask your friend about?*
- *How strong would the pain level have to be before you would tell them to do something or do something different than you mentioned above? (Use the numbers indicated on the pain scale above.)*
- *What would you tell your friend to do if it reached this pain level?*
- *The following questions will ask for your input regarding the above scenario (imagining your friend experiencing the level of pain as you indicated before). Although your answers may seem repetitive, please indicate your responses accurately based on how you would respond to the situation. Given the current health scenario (with the new pain level you marked), how likely are you to suggest some type of remedy or medicine to alleviate their discomfort?*
- *If you were to advise a remedy or medicine for your friend's symptoms, what would it be? (If several, please list all)*
- *Given your friends situation, how likely are you to advise them to speak with someone else about this issue?*
- *Who would you recommend they speak with (e.g. friend, mother, sister, etc). Please list all.*
- *Given the above health scenario, how likely are you to advise them to see a healthcare professional?*
- *If you were to advise them to see a healthcare professional for their current pain, what would you recommend they do?*
- *Given this situation, what do you think this could be (i.e. your diagnosis)?*
- *How certain are you that you know what this could be?*

Table 3. ***Response Distributions for Health-Seeking Behaviors***

Professional	*Do Anything* (n=129)	*OTC/HR* (n=116)	*Talk* (n=121)	*Healthcare* (n=116)
Response Time				
Within 2 hours	24.2%	50.4%	44.2%	7%
>2 hours through 12	28.1%	30.4%	25.8%	12.2%
>12 hours through 24	21.9%	8.7%	15.0%	22.6%
36 hours and above	25.8%	10.4%	15.0%	58.3%

Note. Exhaustive categories based on actual data. No data points were excluded.

Table 4. ***Results of Ordinal Logistic Regression Analyses: Gender and Health Anxiety as predictors of latency of health-seeking behaviors***

Do Anything	*Medication/Home Remedy*	*Talk to Someone*	*See a Professional*
Gender (Men=1, Women=0)			
B=.66, SE=.32 *	B=.68, SE=.37	B=.02, SE=.27	B=.06, SE=.37
SHAI (Higher scores indicate greater anxiety)			
B=-.01, SE=.03	B=-.07, SE=.03 *	B=-.03, SE=.03	B=.00, SE=.03

*Note. *p<.05*

Table 5. ***Self-endorsed health-seeking versus advice to a friend: responses for first-action***

Sample Responses
Self
- *Wait out the pain*
- *Try to sleep*
- *I would use the bathroom then try to nap and see if the situation improves*
- *Drink tea/herbal remedy*
- *I would look for medicine, take some. get a heating pack and put it on my stomach and nap.*
- *Go to a website*
- *I would tell my mother or look it up on the Internet*
- *Go to health center*
- *Go to the emergency room*
Friend
- *Wait an hour, and if the pain has not gotten better or gone away, take Advil and drink hot herbal tea. Try to take a break at some point during the day to lay down.*
- *To not over exert her body and try to rest as much as possible*
- *Go to the bathroom to clear your system*
- *Drink tea or herbal remedy. If it doesn't pass in an hour, go to health center*
- *Drink some water, take it easy*
- *Take medicine and if no change, go to hospital.*
- *Go to the doctor, look up any symptoms online*
- *Go to the hospital*

Figure 1. **Wong & Baker Faces Pain Scale (Wong & Baker, 1988).**

Figure 2. **Categorical duration response to "How long would you wait to take action?" by three types of health-seeking behavior.**

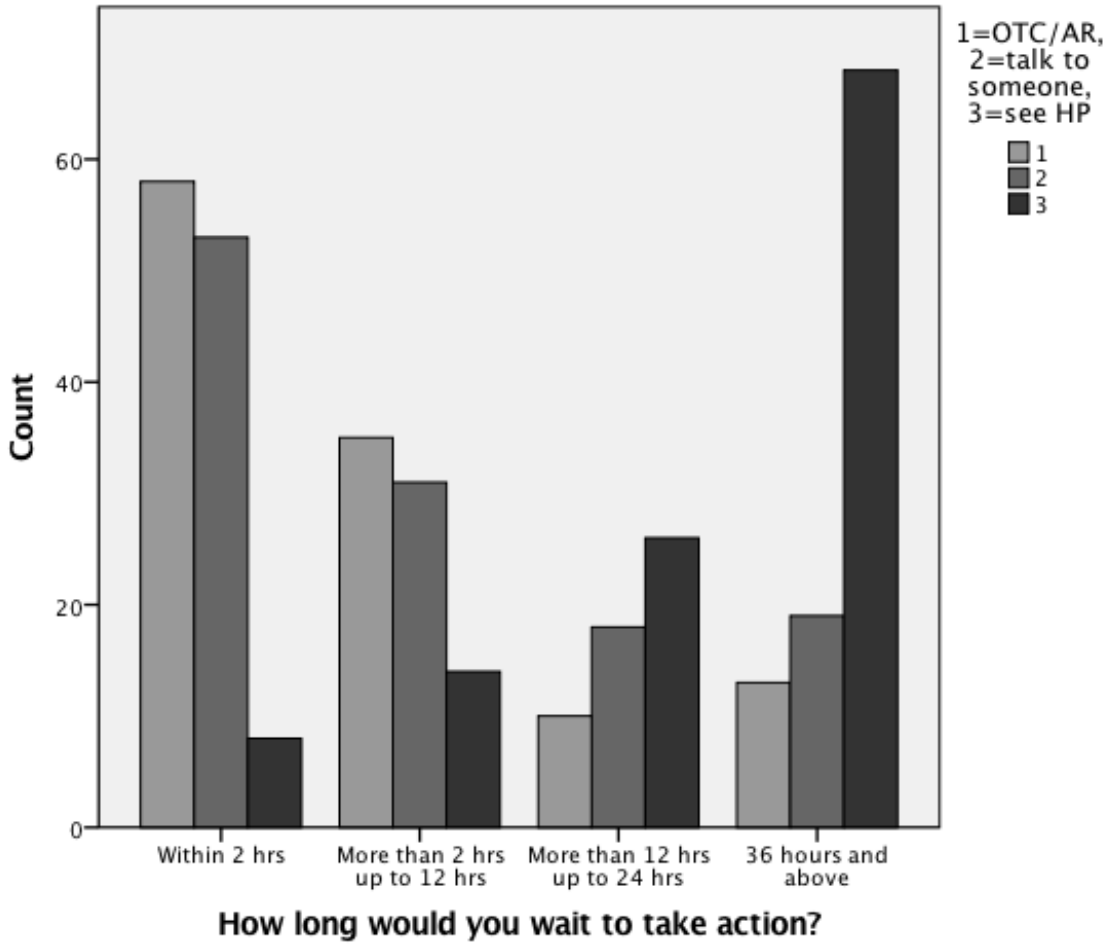


Figure 3. **Count of social domains identified by participants.**

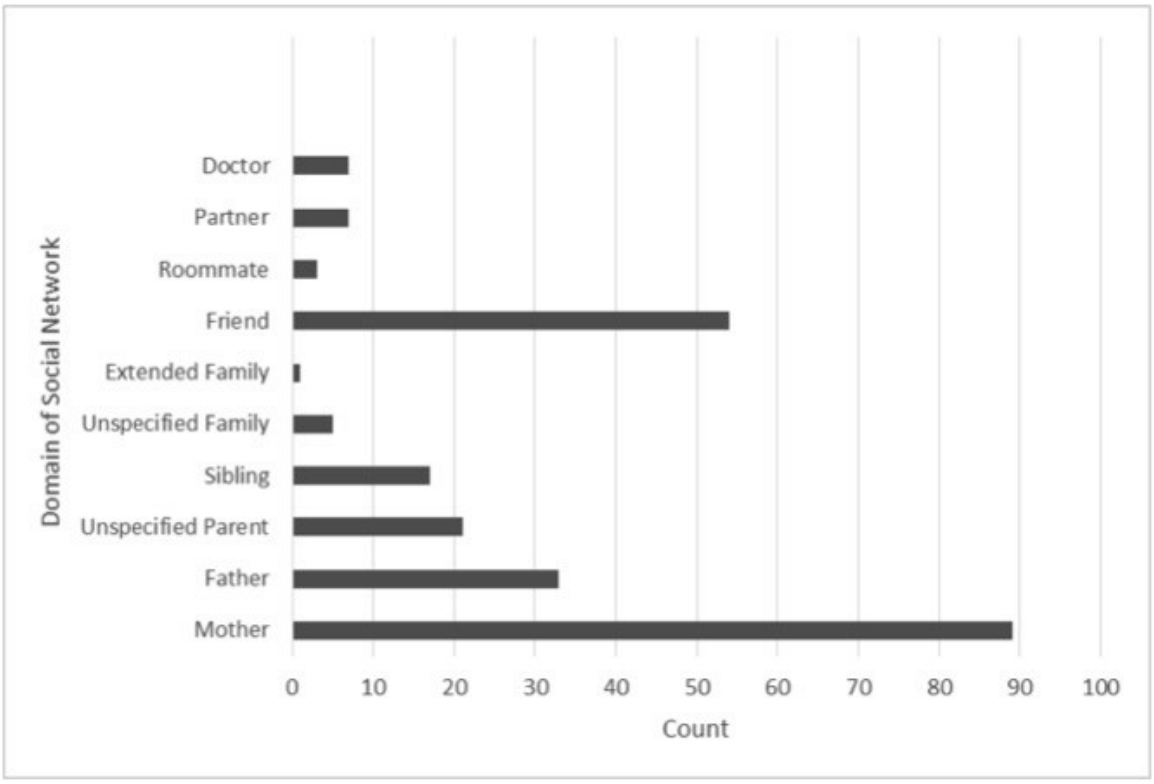
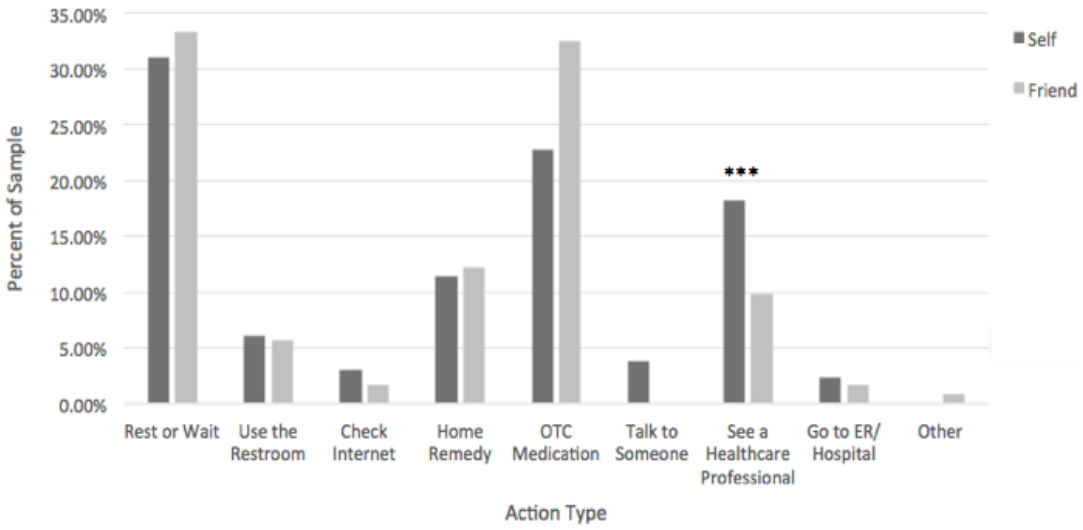


Figure 4. **Percentage of the sample comparing self-action versus advice to a friend.**



List of Appendices

Appendix A. Health Behavior Questionnaire

Health Behavior Questionnaire

CONSENT FORM FOR ANONYMOUS DATA COLLECTION

You are invited to participate in a research study that is being conducted by Jenna Herold, who is a graduate student in the Clinical Psychology Department at Rutgers University. The purpose of this research is to investigate health-seeking behaviors among college students in a cultural context.

Any student enrolled in Rutgers is eligible to participate in this study; all others will be excluded. All those regardless of age, gender or ethnicity can participate. A range of 18-22 years will be the average age of participants, but this study will not exclude those outside the age parameters. Approximately 300 participants will participate in the study, and each individual's participation will last approximately 20-30 minutes. Students will be provided with .5 or 1 RPU credits for participating in this study.

Participation in this study will involve taking an online survey. This survey consists of two main parts and contains 173 questions. These questions will vary in response types of multiple choice, free response, dropdown choices, and likert scales. The first part entails questions concerning demographics, questions about the participant's health (past and present), and the way the participant utilizes the healthcare system.

This research is anonymous. Anonymous means that I will record no information about you that could identify you. There will be no connection between your identity and your responses in the research. This means that I will not record your name, address, phone number, date of birth, etc. There will be no way to link your responses back to you. Therefore, data collection is anonymous.

The research team and the Institutional Review Board at Rutgers University are the only parties that will be allowed to see the data, except as may be required by law. If a report of this study is published, or the results are presented at a professional conference, only group results will be stated. All study data will be kept for three years until May 15th, 2018.

There are no foreseeable risks greater than what you would encounter by filling out a standard medical intake form, such as a discomfort of discussing past medical history or family related medical history. This unlikely risk would not instigate harm or discomfort greater than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations. In addition, you may receive no direct benefit from taking part in this study. However, this study is beneficial to greater society to help understand how individuals view symptom patterns as illness threats, and engage in health seeking behaviors.

The data from this study can be utilized to inform public health policies and preventative programs specifically targeting student health populations, which will can improve health outcomes.

Participation in this study is voluntary. **You may choose not to participate, and you may withdraw at any time during the study procedures without any penalty to you.** In addition, you may choose not to answer any questions with which you are not comfortable.

If you have any questions about the study or study procedures, you may contact myself at the Institute for Health, Health Care Policy and Aging Research, 112 Paterson St., 4th Floor, New Brunswick, NJ 08901, by email at jenna.herold@rutgers.edu, or by phone at 737-707-5311. You can also contact my faculty advisor Howard Leventhal, Ph.D. at the Institute for Health, Health Care Policy and Aging Research, 112 Paterson St., 4th Floor, New Brunswick, NJ 08901, by email at hleventhal@ifh.rutgers.edu , or by phone at 848-932-7537.

If you have any questions about your rights as a research subject, please contact an IRB Administrator at the Rutgers University, Arts and Sciences IRB:

Liberty Plaza / Suite 3200
335 George Street, 3rd Floor
New Brunswick, NJ 08901
Email: humansubjects@orsp.rutgers.edu (732)235-9806

Please retain a copy of this form for your records. By participating in the above stated procedures, then you agree to participation in this study.

1. If you are 18 years of age or older, understand the statements above, and will consent to participate in the study, please click on the "I Agree" button to begin the survey/experiment. If not, please click on the “I Do Not Agree” button which you will exit this program.

- ○ I Agree
- ○ I Do Not Agree

Health Behavior Questionnaire

Demographics

Please answer each of the following questions as accurately as possible. If any questions make you feel uncomfortable or you simply wish to not answer please write N/A in the text box or use the 'prefer not to answer' response choice.

* 2. Age

* 3. Gender?

- Female
- Male
- Other
- Prefer not to answer

* 4. Ethnicity? Please select all that apply.

- American Indian or Alaskan Native
- Asian or Pacific Islander
- Black or African American
- Hispanic or Latino
- White / Caucasian
- Prefer not to answer

Other (please specify)

* 5. Many people feel a strong identification with specific cultures, do you?

- Yes
- No
- Prefer not to answer

* 6. If you answered yes to the previous question, which culture do you identify with? (Check all that apply.)

- [ ] Indian
- [ ] Jewish
- [ ] Chinese
- [ ] Korean
- [ ] Hispanic
- [ ] African American
- [ ] Prefer not to answer
- [ ] Other (please specify)

* 7. If you answered yes to question 5, how strongly do you feel this cultural identification reflects you?

- ○ 1- Very untrue of me
- ○ 2- Untrue of me
- ○ 3- Somewhat untrue of me
- ○ 4 - Neutrally reflects me
- ○ 5- Somewhat true of me
- ○ 6 - True of me
- ○ 7 - Very true of me
- ○ Prefer not to answer
- ○ This question does not apply to me

* 8. If you answered yes to question 5, how much do you prioritize this culture's view on life, social relationships, and health?

- ○ 1- Not a priority
- ○ 2- Low priority
- ○ 3- Medium priority
- ○ 4- High priority
- ○ 5- Essential
- ○ Prefer not to answer
- ○ This question does not apply to me

* 9. Where did you grow up? (State and Country)

* 10. Did you grow up in a rural or urban area? (Defined by the United States Census Bureau, Urban refers to an area with 50,000 or more people, while the rural area is defined as all populations, housing, and territory outside the categorized urban areas or clusters.)

* 11. What was the prevalent culture in the area which you grew up? (If mixed, please list the predominant cultures)

* 12. Are you an international student?

* 13. If you answered yes to question 8, what country are you a resident of?

* 14. Are you an American Citizen?

- Yes
- No
- Prefer not to answer

* 15. If your parents immigrated to the US, where were they originally born?

Mother:

Father:

* 16. Were you born in the United States?

- Yes
- No
- Prefer not to answer

* 17. If you answered no to the above question, how old were you when you came to the United States? (If you answered yes, please write N/A)

* 18. Is English your first language?

- Yes
- No
- Prefer not to answer

* 19. What is your current year of study? (i.e. Freshman, Sophomore, Junior, etc)

- ○ Freshman
- ○ Sophomore
- ○ Junior
- ○ Senior
- ○ Prefer not to answer

* 20. Where do you live?

- ○ Off Campus
- ○ Off Campus--Living at Home (with parents/family)
- ○ On Campus
- ○ Prefer not to answer
- ○ Other (please specify)

* 21. If you commute to Rutgers, how far away do you live?

- ○ Less than a 15 minutes commute
- ○ Between a 15 and 30 minute commute
- ○ Between a 30 minute to an hour commute
- ○ Greater than an hour commute
- ○ I do not commute, I live on campus
- ○ Prefer not to answer

* 22. What is your major and minor? (if double major please specify all)

Major:

Minor:

* 23. What is the highest level of school yourmother completed or the highest degree she received?

- Some High School, no degree
- High school degree or equivalent (e.g., GED)
- Some college, no degree
- Associate degree
- Bachelor degree
- Graduate degree (Masters)
- Some Graduate, no degree
- Doctoral-(PhD, JD)
- MD
- Prefer not to answer
- Other (please specify)

* 24. What is the highest level of school yourfather completed or the highest degree he received?

- Some High School, no degree
- High School degree or equivalent (e.g., GED)
- Some college, no degree
- Associate degree
- Bachelor's degree
- Some Graduate, no degree
- Graduate degree (Master's)
- Doctoral- (PhD, JD)
- MD
- Prefer not to answer
- Other (please specify)

* 25. Have you ever been trained for a certification for First Aid Responder, CPR/AED, Lifeguard, or EMT?

- Yes
- No
- Prefer not to answer

Health Behavior Questionnaire

* 26. In general, how would you rate your overall health (on a scale of 1-5)?

- 5 = Excellent
- 4 = Very good
- 3 = Good
- 2 = Fair
- 1= Poor
- Prefer not to answer

What goes through your mind when you rate your health?

Health Behavior Questionnaire

Medical History

Please answer the following questions to the best of your ability. If one of the fill in questions does not apply to you or you prefer not to answer, please write N/A.

* 27. Have you ever had and/or been diagnosed with any of the following conditions? Please check all that apply.

- [ ] Asthma
- [ ] Breathing Difficulty
- [ ] COPD
- [ ] Cancer
- [ ] Depression
- [ ] Anxiety
- [ ] Type 1 Diabetes
- [ ] Type 2 Diabetes
- [ ] Influenza
- [ ] Chicken Pox
- [ ] Heart Problems
- [ ] Seizures
- [ ] Hypertension
- [ ] Digestion Issues (such as: Irritable Bowel Syndrome)
- [ ] None
- [ ] Prefer not to answer

Other:

* 28. Have you ever been hospitalized?

- ( ) Yes
- ( ) No
- ( ) Prefer not to answer

* 29. If you answered yes to the question above, please specify what you were hospitalized for. (If multiple, please list all: e.g. concussion, broken leg)

* 30. If you answered yes to question 27, please specify how many days you were hospitalized for. (If multiple hospitalizations, please list the first amount followed by a comma then the next: e.g. 2, 4).

* 31. Have any of your grandparents, parents, siblings, or other close relatives had any serious illnesses? Please check all that apply.

- [ ] Heart Problems
- [ ] Cancer
- [ ] Terminal Illness
- [ ] Chronic Conditions (e.g. diabetes, asthma, hypertension)
- [ ] Neurological Diseases (e.g. Parkisons, Seizures, etc)
- [ ] No
- [ ] Prefer not to answer
- [ ] Other (please specify)

* 32. If you checked off boxes above, please now designate who (which family member: e.g. Cancer: maternal grandfather) had that medical condition. Please list as many as necessary, and for each box checked.

Heart Problems	
Cancer	
Terminal Illness	
Chronic Conditions (e.g. diabetes, asthma, hypertension)	
Neurological Diseases (e.g. Parkinsons, seizures, etc.)	
Prefer not to answer	

* 33. Do you take any medication regularly? (e.g. insulin, allergy medication, etc.)

- ( ) Yes
- ( ) No
- ( ) Prefer not to answer

* 34. Do you have a primary care physician? (i.e. someone you go to regularly for check ups)

- Yes
- No
- Prefer not to answer

* 35. If feeling unwell would you go to a Rutgers health center?

- Yes
- No
- Prefer not to answer

If no, where would you go?

* 36. How often do you search for health information using the Internet? (for example, if you were experiencing unfamiliar symptoms, would you look online to find out what it could be?)

- Never
- Rarely
- Sometimes
- Often
- Always
- Prefer not to answer

* 37. Do you take further action after researching for health information on the Internet?

- Never
- Rarely
- Sometimes
- Often
- Always
- Prefer not to answer

* 38. If your answer was Yes (rarely, sometimes, often or always), what do you typically do after researching health information online?

* 39. Have you ever been a caretaker for someone with a chronic/terminal illness? (i.e. taken them to doctor's visits, picked up prescriptions, changed bandages, etc.)

- ○ Yes
- ○ No
- ○ Prefer not to answer

* 40. If you answered yes to the question above, please answer the following questions.

What was your relationship with the person you took care of (e.g. Mom, Brother, Cousin, Aunt, Grandfather, etc)?

What did you help with (i.e. what were your caretaking duties)?

* 41. Do you have health insurance?

- ○ Yes, I'm covered under my parents policy
- ○ Yes, through Rutgers
- ○ Yes, I have an Individual Policy (not Rutgers related)
- ○ No, I am not covered
- ○ Prefer not to answer
- ○ Other (please specify)

* 42. Which medical professionals do you see on a yearly basis? (Please check all that apply.

- ☐ Cardiologist
- ☐ Primary Care Physician (e.g. family doctor)
- ☐ Dermatologist
- ☐ Gynecologist
- ☐ Oncologist
- ☐ Ophthalmologist
- ☐ Psychiatrist
- ☐ Dentist
- ☐ None
- ☐ Prefer not to answer
- ☐ Other (please specify)

The following five questions are related to your culture:

* 43. Are their genetic predispositions or illnesses associated with your culture?

- Yes
- No
- I am not sure
- Prefer not to answer

If yes please specify

* 44. Does anyone in your family use and/or recommend one or more home remedies or foods to treat or prevent health problems?

- Yes
- No
- Prefer not to answer

If yes, please describe.

* 45. If you answered yes to the previous question, do you use these cultural remedies to treat or prevent illnesses?

- Use for prevention
- Use for treatment
- Use for prevention and treatment
- Prefer not to answer
- This question does not apply to me

* 46. If you answered yes to question 44, who would recommend this remedy to you?

- Mother
- Father
- Prefer not to answer
- This question does not apply to me
- Other family member (please specify)

* 47. If you answered yes to question 44, are these remedies common among people in your culture or community?

- ○ Yes
- ○ No
- ○ I am not sure
- ○ Prefer not to answer
- ○ This question does not apply to me

Health Behavior Questionnaire

The following questions will inquire about your utilization of healthcare services.

* 48. In the past 6 months, how many times did you go to a hospital emergency room (on your behalf)? Fill in with "0" or another number.

* 49. How many times in the past 6 months, did you visit a doctor because something was bothering you? Do not include visits while in the hospital or to a hospital emergency room. Fill in with "0" or another number.

* 50. How many times were you hospitalized during the last 6 months (if any)? Fill in with "0" or another number.

* 51. If you were hospitalized in the past 6 months, how many nights was your longest stay? Fill in with "0" or another number.

* 52. How many times over the past 6 months did you experience abdominal pain (i.e. located in or around your stomach)? Fill in with "0" or another number.

* 53. When was the last time you experienced abdominal pain?

- Less than 24 hours ago
- Less than a week ago
- Less than 2 weeks ago
- A month ago
- Within the past 6 months
- Over 6 months ago
- Prefer not to answer
- Other (please specify)

Health Behavior Questionnaire

READ BEFORE MOVING ON: Going forward you will be asked to use the scale below to relate to a pain level. At this time please orient and familiarize yourself with the pain scale below.

Each face below represents an individual who has no pain (hurt) or some, or a lot of pain.

Face 0 doesn't hurt at all. Face 2 hurts just a little bit. Face 4 hurts a little bit more. Face 6 hurts even more. Face 8 hurts a whole lot. Face 10 hurts as much as you can imagine, although you don't have to be crying to have this worst pain.

In future questions, you will be asked to designate the number under the face that best represents your pain level in the given situation.

Health Behavior Questionnaire

The following will inquire about your behavior towards health situations. If there are any questions that make you uncomfortable or you do not wish to answer, please write N/A in the text box.

* 54. If you have a stomachache, what is the first thing you think of doing?

For the next few questions you will be asked to refer to this pain scale:

* 55. If you had stomach (abdominal) pain, of a 2 on the scale above, what number on the pain scale (above) would make you consider taking a medication such as an over the counter medication? (i.e. Tylenol/Acetaminophen or Advil/Ibuprofen)

- 0
- 2
- 4
- 6
- 8
- 10
- None
- Prefer not to answer
- If none, please explain:

* 56. What would a family member (or close friend) tell you to do if you felt this way? (in the scenario above)

* 57. If you have a minor ache or pain, such as a stomachache, what number on the pain scale (above) would make you consider using an alternative remedy (i.e. herbal tea, acupuncture, etc)?

- 0
- 2
- 4
- 6
- 8
- 10
- None
- Prefer not to answer

If none, please explain:

* 58. What number on the pain scale would make you seek out care of a medical professional?

- ○ 0
- ○ 2
- ○ 4
- ○ 6
- ○ 8
- ○ 10
- ○ None
- ○ Prefer not to answer
- ○ If none, please explain why:

Health Behavior Questionnaire

Health Scenarios

PLEASE READ BEFORE MOVING ON: You will now be presented with a **series of health scenarios. Please answer all of the questions honestly and with responses reflecting how you would act if this was happening to you.** If there are any questions that make you feel uncomfortable or you do not wish to answer, simply write N/A in the text box.

Health Behavior Questionnaire

Please read each question carefully. Although questions may seem the same, they are different. Please answer the questions using the faces pain scale below.

* 59. Imagine you are experiencing all over abdominal pain of 4 on the scale shown above, how long would you wait to do something about it? (please express your answer with a number and indicate minutes, hours, days; e.g. 3 hours)

* 60. Given the scenario above what would you do?

* 61. Imagine you are experiencing all over abdominal pain of 4 on the scale shown above, how long would you wait to take an over the counter medication (i.e. tylenol, advil, etc) or use an alternative remedy (i.e. herbal tea, acupuncture, etc) to make you feel better?

* 62. If you decided to use a remedy or medicine for this pain, what would it be? (if several, please list all)

* 63. If you are experiencing all over abdominal pain of 4 on the scale shown above, how long would you wait to talk to someone about your symptoms?

* 64. Who would you discuss this with (e.g. friend, mother, brother, etc)?Please list all.

* 65. What would a family member (or close friend) tell you to do if you felt this way?

* 66. If you are experiencing all over abdominal pain of 4 on the ten point scale shown above, how long would you wait to see a healthcare professional about your symptoms?

* 67. If you were to see a healthcare professional for this abdominal pain, where would you go?

- ○ To a Rutgers Health Center
- ○ Schedule an appointment to see your primary care physician (e.g. family doctor)
- ○ Schedule an appointment to see a specialist doctor
- ○ To the emergency room
- ○ Prefer not to answer
- ○ Other (please specify)

* 68. If you experienced this pain in real life, would you have some idea as to what it might be?

- ○ Yes
- ○ No
- ○ Prefer not to answer

If yes, What do you think it could be (your diagnosis)?

Health Behavior Questionnaire

Please read each question carefully. Although questions may seem the same, they are different. Please answer the questions using the faces pain scale below.

* 69. Imagine you are experiencing all over abdominal pain for 24 hours, what number on the pain scale (above), would the pain level have to reach before you would do something about it?

* 70. Given the scenario above what would you do? Please explain.

* 71. Imagine you are experiencing all over abdominal pain for 24 hours, what number on the pain scale (above), would the pain level have to reach before you take an over the counter medication (i.e. tylenol, advil, etc) or use an alternative remedy (i.e. herbal tea, acupuncture, etc) to make you feel better?

* 72. If you were to use a remedy or medicine for this pain, what would it be? (if several, please list all)

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* 73. If you are experiencing all over abdominal pain for 24 hours, what number on the pain scale (above), would the pain level have to reach before you talk to someone about your symptoms?

* 74. Who would you discuss this with (e.g. friend, mother, brother, etc)?Please list all.

* 75. What would a family member (or close friend) tell you to do if you felt this way?

* 76. If you are experiencing all over abdominal pain for 24 hours, what number on the pain scale (above) would the pain level have to reach to get you to go see a healthcare professional about your pain?

* 77. If you were to see a healthcare professional for this abdominal pain, where would you go?

- To a Rutgers Health Center
- Schedule an appointment to see your primary care physician (e.g. family doctor)
- Schedule an appointment to see a specialist doctor
- To the emergency room
- Prefer not to answer
- Other (please specify)

Health Behavior Questionnaire

Please read each question carefully. Although questions may seem the same, they are different. Please answer the questions using the faces pain scale below.

* 78. Imagine you are heading to class in the morning and begin to feel pain of 4 (refer to pain scale above) all over your stomach (i.e. abdominal region). A short time later your pain feels a little better, a level 2 on the pain scale, and an hour after that it goes up to 6 on the pain scale. Given how you are feeling and given this changing pain level, what would you do now?

- [ ] Wait to see what happens
- [ ] Take medication or use a natural remedy
- [ ] Talk to someone about your symptoms
- [ ] Make arrangements to see a healthcare professional as soon as possible
- [ ] Prefer not to answer
- [ ] Other

* 79. Why would you take the action you selected above (please specify)?

* 80. If you answered that you would "wait to see what happens", how long would you wait?

* 81. If you were to use a remedy or medicine for this pain, what would it be? (If several, please list all)

* 82. If you were to talk to someone about your symptoms, who would that be (e.g. friend, mother, brother, etc)? Please list all.

* 83. What would a family member (or close friend) tell you to do if you felt this way?

* 84. If you were to see a healthcare professional for this abdominal pain, where would you go?

- To a Rutgers Health Center
- Schedule an appointment to see your primary care physician (e.g. family doctor)
- Schedule an appointment to see a specialist doctor
- To the emergency room
- Prefer not to answer
- Other (please specify)

* 85. What do you think this could be (i.e. your diagnosis)?

* 86. How certain are you that you know what this could be?

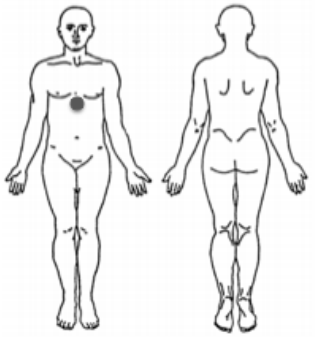
- 1- Very uncertain
- 2- Somewhat uncertain
- 3- Neither certain nor uncertain
- 4- Somewhat certain
- 5- Very certain
- Prefer not to answer

Health Behavior Questionnaire

PLEASE READ ALL INSTRUCTIONS BEFORE MOVING ON: You will now move on to the next section of the health scenarios. You will be presented with 5 health scenarios pertaining to a health issue in the stomach area. **Imagine these scenarios separate from the ones you have just responded to.** In these scenarios **the pain described will be in a specific area** , in contrast to before where the pain was generally all over in the stomach region. If any of the questions make you uncomfortable or you do not wish to answer, please either write N/A in the text box or choose the 'prefer not to answer' option.

Health Behavior Questionnaire

Please read each question carefully. Although questions may seem the same, they are different. Please answer the questions using the faces pain scale below.

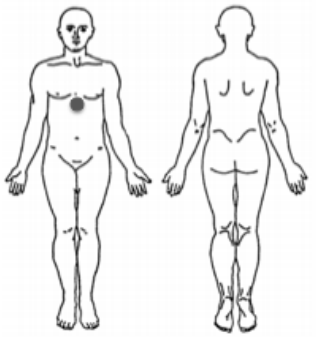


* 87. Imagine you wake up in the morning and are experiencing abdominal pain of **6** (as referenced on the scale above) in your **upper middle abdominal region** (shown on the diagram above). Given how you are feeling, how long would you wait to do something about this pain?

* 88. Given the scenario above, what would you do? Please explain.

* 89. Imagine you wake up in the morning and are experiencing abdominal pain of **6** (as referenced on the scale above) in the **upper middle abdominal region** (shown on the diagram above). Given how you are feeling, how long would you wait to take an over the counter medication (i.e. tylenol, advil, etc) or use an alternative remedy (i.e. herbal tea, acupuncture, etc) to make you feel better?

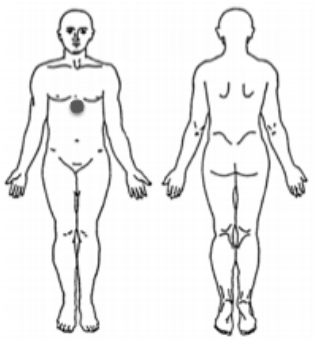
* 90. If you were to use a remedy or medicine for this pain, what would it be? (If several, please list all)



* 91. Imagine you wake up in the morning and are experiencing abdominal pain of 6 (as referenced on the scale above) in the upper middle abdominal region (shown on the diagram above). Given how you are feeling, how long would you wait to talk to someone about your symptoms?

* 92. Who would you discuss this with (e.g. friend, mother, brother, etc)Please list all.

* 93. What would a family member (or close friend) tell you to do if you felt this way?



* 94. Imagine you wake up in the morning and are experiencing abdominal pain of 6 (as referenced on the scale above) in the upper middle abdominal region (shown on the diagram above). Given how you are feeling, how long would you wait before you go to see a healthcare professional about your pain?

* 95. If you were to see a healthcare professional for this abdominal pain, where would you go?

- To a Rutgers Health Center
- Schedule an appointment to see your primary care physician (e.g. family doctor)
- Schedule an appointment to see a specialist doctor
- To the emergency room
- Prefer not to answer
- Other (please specify)

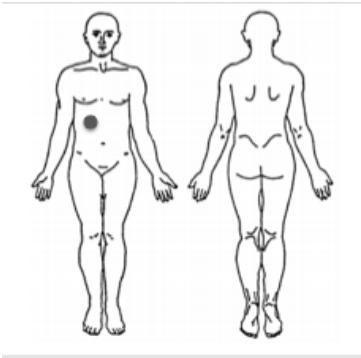
* 96. What do you think this could be (i.e. your diagnosis)?

* 97. How certain are you that you know what this could be?

- 1- Very uncertain
- 2- Somewhat uncertain
- 3- Neither certain nor uncertain
- 4- Somewhat certain
- 5- Very certain
- Prefer not to answer

Health Behavior Questionnaire

Please read each question carefully. Although questions may seem the same, they are different. Please answer the questions using the faces pain scale below.

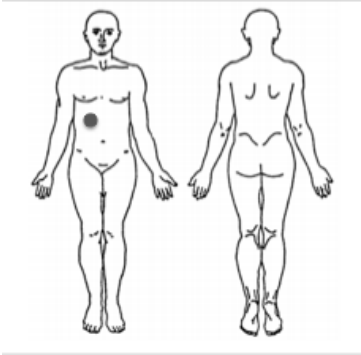


* 98. Imagine you wake up in the morning and are experiencing abdominal pain of **6** (as referenced on the scale above) in the **upper right abdominal region** (shown on the diagram above). Given how you are feeling, how long would you wait to do something about this pain?

* 99. Given the scenario above, what would you do?

* 100. Imagine you wake up in the morning and are experiencing abdominal pain of **6** (as referenced on the scale above) in the **upper right abdominal region** (shown on the diagram above). Given how you are feeling, how long would you wait to take an over the counter medication (i.e. tylenol, advil, etc) or use an alternative remedy (i.e. herbal tea, acupuncture, etc) to make you feel better?

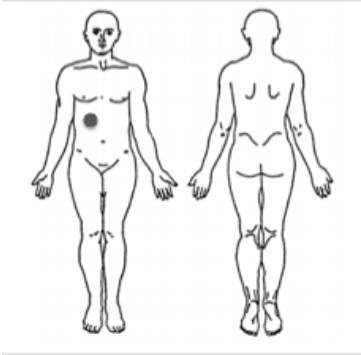
* 101. If you were to use a remedy or medicine for this pain, what would it be? (If several, please list all)



* 102. Imagine you wake up in the morning and are experiencing abdominal pain of 6 (as referenced on the scale above) in the upper right abdominal region (shown on the diagram above). Given how you are feeling, how long would you wait to talk to someone about your symptoms?

* 103. Who would you discuss this with (e.g. friend, mother, brother, etc)Please list all.

* 104. What would a family member (or close friend) tell you to do if you felt this way?



* 105. Imagine you wake up in the morning and are experiencing abdominal pain of 6 (as referenced on the scale above) in the upper right abdominal region (shown on the diagram above). Given how you are feeling, how long would you wait before you go to see a healthcare professional about your pain?

* 106. If you were to see a healthcare professional for this abdominal pain, where would you go?

- To a Rutgers Health Center
- Schedule an appointment to see your primary care physician (e.g. family doctor)
- Schedule an appointment to see a specialist doctor
- To the emergency room
- Prefer not to answer
- Other (please specify)

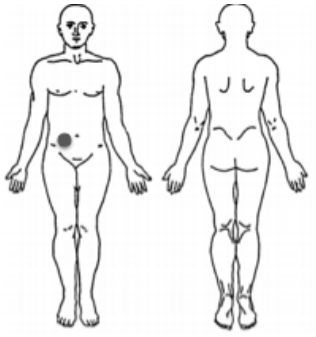
* 107. What do you think this could be (i.e. your diagnosis)?

* 108. How certain are you that you know what this could be?

- 1- Very uncertain
- 2- Somewhat uncertain
- 3- Neither certain nor uncertain
- 4- Somewhat certain
- 5- Very certain
- Prefer not to answer

Health Behavior Questionnaire

Please read each question carefully. Although questions may seem the same, they are different. Please answer the questions using the faces pain scale below.

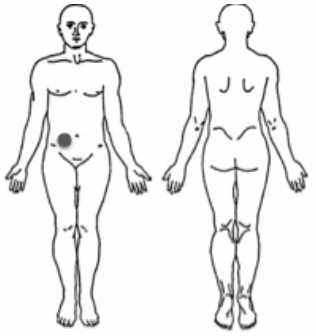


* 109. Imagine you wake up in the morning and are experiencing abdominal pain of**6** (as referenced on the scale above) in the lower **right abdominal region** (shown on the diagram above). Given how you are feeling, how long would you wait to do something about this pain?

* 110. Given the scenario above, what would you do?

* 111. Imagine you wake up in the morning and are experiencing abdominal pain of**6** (as referenced on the scale above) in the lower right **abdominal region** (shown on the diagram above). Given how you are feeling, how long would you wait to take an over the counter medication (i.e. tylenol, advil, etc) or use an alternative remedy (i.e. herbal tea, acupuncture, etc) to make you feel better?

* 112. If you were to use a remedy or medicine for this pain, what would it be? (If several, please list all)



* 113. Imagine you wake up in the morning and are experiencing abdominal pain of 6 (as referenced on the scale above) in the lower right abdominal region (shown on the diagram above). Given how you are feeling, how long would you wait to talk to someone about your symptoms?

* 114. Who would you discuss this with (e.g. friend, mother, brother, etc)Please list all.

* 115. What would a family member (or close friend) tell you to do if you felt this way?

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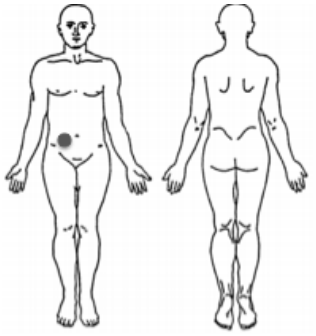


* 116. Imagine you wake up in the morning and are experiencing abdominal pain of 6 (as referenced on the scale above) in the lower right abdominal region (shown on the diagram above). Given how you are feeling, how long would you wait before you go to see a healthcare professional about your pain?

* 117. If you were to see a healthcare professional for this abdominal pain, where would you go?

- To a Rutgers Health Center
- Schedule an appointment to see your primary care physician (e.g. family doctor)
- Schedule an appointment to see a specialist doctor
- To the emergency room
- Prefer not to answer
- Other (please specify)

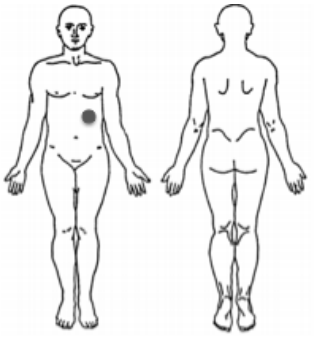
* 118. What do you think this could be (i.e. your diagnosis)?

* 119. How certain are you that you know what this could be?

- 1- Very uncertain
- 2- Somewhat uncertain
- 3- Neither certain nor uncertain
- 4- Somewhat certain
- 5- Very certain
- Prefer not to answer

Health Behavior Questionnaire

Please read each question carefully. Although questions may seem the same, they are different. Please answer the questions using the faces pain scale below.

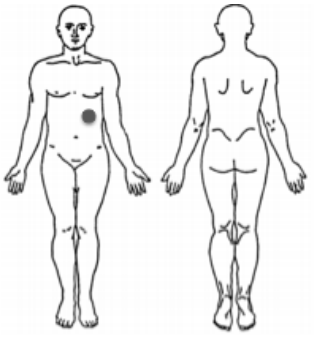


* 120. Imagine you wake up in the morning and are experiencing abdominal pain of**6** (as referenced on the scale above) in the upper left **abdominal region** (shown on the diagram above). Given how you are feeling, how long would you wait to do something about this pain?

* 121. Given the scenario above, what would you do? Please explain.

* 122. Imagine you wake up in the morning and are experiencing abdominal pain of**6** (as referenced on the scale above) in the **upper left abdominal region** (shown on the diagram above). Given how you are feeling, how long would you wait to take an over the counter medication (i.e. tylenol, advil, etc) or use an alternative remedy (i.e. herbal tea, acupuncture, etc) to make you feel better?

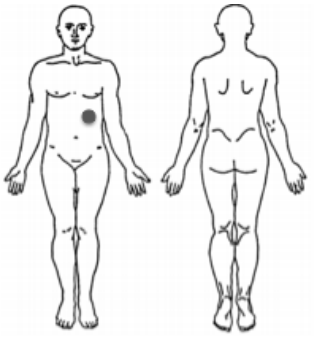
* 123. If you were to use a remedy or medicine for this pain, what would it be?



* 124. Imagine you wake up in the morning and are experiencing abdominal pain of 6 (as referenced on the scale above) in the upper left abdominal region (shown on the diagram above). Given how you are feeling, how long would you wait to talk to someone about your symptoms?

* 125. Who would you discuss this with (e.g. friend, mother, brother, etc)Please list all.

* 126. What would a family member (or close friend) tell you to do if you felt this way?



* 127. Imagine you wake up in the morning and are experiencing abdominal pain of 6 (as referenced on the scale above) in the upper left abdominal region (shown on the diagram above). Given how you are feeling, how long would you wait before you go to see a healthcare professional about your pain?

* 128. If you were to see a healthcare professional for this abdominal pain, where would you go?

- To a Rutgers Health Center
- Schedule an appointment to see your primary care physician (e.g. family doctor)
- Schedule an appointment to see a specialist doctor
- To the emergency room
- Prefer not to answer
- Other (please specify)

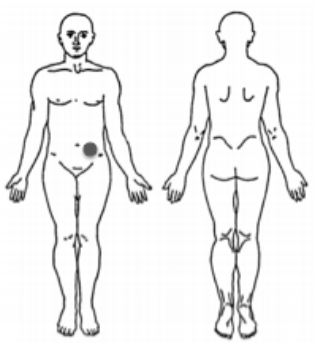
* 129. What do you think this could be (i.e. your diagnosis)?

* 130. How certain are you that you know what this could be?

- 1- Very uncertain
- 2- Somewhat uncertain
- 3- Neither certain nor uncertain
- 4- Somewhat certain
- 5- Very certain
- Prefer not to answer

Health Behavior Questionnaire

Please read each question carefully. Although questions may seem the same, they are different. Please answer the questions using the faces pain scale below.

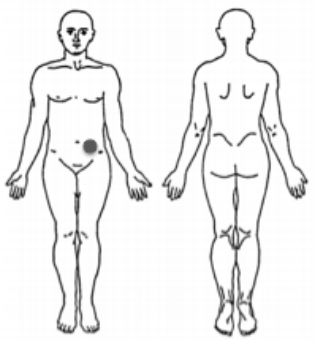


* 131. Imagine you wake up in the morning and are experiencing abdominal pain of **6** (as referenced on the scale above) in the lower left **abdominal region** (shown on the diagram above). Given how you are feeling, how long would you wait to do something about this pain?

* 132. Given the scenario above, what would you do?

* 133. Imagine you wake up in the morning and are experiencing abdominal pain of **6** (as referenced on the scale above) in the lower left **abdominal region** (shown on the diagram above). Given how you are feeling, how long would you wait to take an over the counter medication (i.e. tylenol, advil, etc) or use an alternative remedy (i.e. herbal tea, acupuncture, etc) to make you feel better?

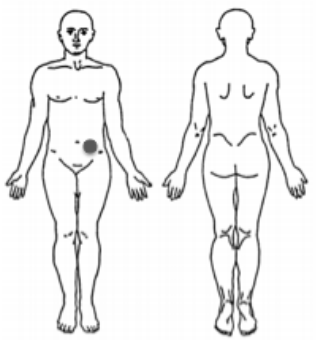
* 134. If you were to use a remedy or medicine for this pain, what would it be? (If several, please list all)



* 135. Imagine you wake up in the morning and are experiencing abdominal pain of 6 (as referenced on the scale above) in the lower left abdominal region (shown on the diagram above). Given how you are feeling, how long would you wait to talk to someone about your symptoms?

* 136. Who would you discuss this with (e.g. friend, mother, brother, etc)Please list all.

* 137. What would a family member (or close friend) tell you to do if you felt this way?



* 138. Imagine you wake up in the morning and are experiencing abdominal pain of 6 (as referenced on the scale above) in the lower left abdominal region (shown on the diagram above). Given how you are feeling, how long would you wait before you go to see a healthcare professional about your pain?

* 139. If you were to see a healthcare professional for this abdominal pain, where would you go?

- To a Rutgers Health Center
- Schedule an appointment to see your primary care physician (e.g. family doctor)
- Schedule an appointment to see a specialist doctor
- To the emergency room
- Prefer not to answer
- Other (please specify)

* 140. What do you think this could be (i.e. your diagnosis)?

* 141. How certain are you that you know what this could be?

- 1- Very uncertain
- 2- Somewhat uncertain
- 3- Neither certain nor uncertain
- 4- Somewhat certain
- 5- Very certain
- Prefer not to answer

Health Behavior Questionnaire

PLEASE READ DIRECTIONS BEFORE MOVING ON: You will now be presented with ONE LAST scenario. **This may seem repetitive, however, now you will answer the questions as if a close friend (who is your age) has come to you with this problem.** Please answer the questions according to how you would help a friend given this situation. If any of these questions make you feel uncomfortable or you wish to not answer, please write N/A in the text box or choose the 'prefer not to answer' option.

Health Behavior Questionnaire

Please read the health scenario below, taking notice of the pain scale. Please answer the questions following with the health scenario in mind.

Imagine a close friend says the following to you before going to class: " I woke up this morning and felt all over pain in my stomach. I felt about a **pain of 4** (out of 10, on the pain scale below). Since I have so much to do today I am trying to tough it out and get my work done. What do you think?"

* 142. What advice would you give your friend? (please be as detailed as possible)

* 143. What is your friend's gender? (the friend you are giving advice to in this situation)

- Male
- Female
- Other
- Prefer not to say

* 144. Is there any other information you would have wanted to ask your friend about?

* 145. How strong would the pain level have to be before you would tell them to do something or do something different than you mentioned above? (Use the numbers indicated on the pain scale above.)

* 146. What would you tell your friend to do if it reached this pain level?

The following questions will ask for your input regarding the above scenario (imagining your friend experiencing the level of pain as you indicated in question 145). Although your answers may seem repetitive, please indicate your responses accurately based on how you would respond to the situation.

* 147. Given the current health scenario (with the new pain level you marked in question 145), how likely are you to suggest some type of remedy or medicine to alleviate their discomfort?

- 1 – Extremely unlikely
- 2 – Unlikely
- 3 – Neutral
- 4 – Likely
- 5 – Extremely likely
- Prefer not to answer

* 148. If you were to advise a remedy or medicine for your friend's symptoms, what would it be? (If several, please list all)

* 149. Given your friends situation, how likely are you to advise them to speak with someone else about this issue?

- 1 – Extremely unlikely
- 2 – Unlikely
- 3 – Neutral
- 4 – Likely
- 5 – Extremely likely
- Prefer not to answer

* 150. Who would you recommend they speak with (e.g. friend, mother, sister, etc). Please list all.

* 151. Given the above health scenario, how likely are you to advise them to see a healthcare professional?

- 1 – Extremely unlikely
- 2 – Unlikely
- 3 – Neutral
- 4 – Likely
- 5 – Extremely likely
- Prefer not to answer

* 152. If you were to advise them to see a healthcare professional for their current pain, what would you recommend they do?

- Go to a Rutgers Health Center
- Schedule an appointment to see their primary care physician
- Schedule an appointment to see a specialist doctor
- Go to the emergency room
- Prefer not to answer
- Other (please specify)

* 153. Given this situation, what do you think this could be (i.e. your diagnosis)?

* 154. How certain are you that you know what this could be?

- 1- Very uncertain
- 2- Somewhat uncertain
- 3- Neither certain nor uncertain
- 4- Somewhat certain
- 5- Very certain
- Prefer not to answer

Health Behavior Questionnaire

The following section is completely separate to the questions previously asked. Please answer the following questions as instructed.

* 155. Please indicate your level of agreement for the following statements.

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree	Prefer not to answer
I am confident I can have a positive effect on my health	○	○	○	○	○	○
I have set some definite goals to improve my health	○	○	○	○	○	○
I have been able to meet the goals I set for myself to improve my health	○	○	○	○	○	○
I am actively working to improve my health	○	○	○	○	○	○
I feel that I am in control of how and what I learn about my health	○	○	○	○	○	○

Health Behavior Questionnaire

Each question in this section consists of a group of four statements. Please read each group of statements carefully and then select the one which best describes your feelings, over the past six months.

* 156. Please select a statement which best reflects your feelings (over the past 6 months):

- I do not worry about my health.
- I occasionally worry about my health.
- I spend much of my time worrying about my health.
- I spend most of my time worrying about my health.
- I prefer not to answer

* 157. Please select a statement which best reflects your feelings (over the past 6 months):

- I notice aches/pains less than most other people (of my age).
- I notice aches/pains as much as most other people (of my age).
- I notice aches/pains more than most other people (of my age).
- I am aware of aches/pains in my body all the time.
- I prefer not to answer

* 158. Please select a statement which best reflects your feelings (over the past 6 months):

- As a rule I am not aware of bodily sensations or changes.
- Sometimes I am aware of bodily sensations or changes.
- I am often aware of bodily sensations or changes.
- I am constantly aware of bodily sensations or changes.
- I prefer not to answer

* 159. Please select a statement which best reflects your feelings (over the past 6 months):

- Resisting thoughts of illness is never a problem.
- Most of the time I can resist thoughts of illness.
- I try to resist thoughts of illness but am often unable to do so.
- Thoughts of illness are so strong that I no longer even try to resist them.
- I prefer not to answer

* 160. Please select a statement which best reflects your feelings (over the past 6 months):

- As a rule I am not afraid that I have a serious illness.
- I am sometimes afraid that I have a serious illness.
- I am often afraid that I have a serious illness.
- I am always afraid that I have a serious illness.
- I prefer not to answer

* 161. Please select a statement which best reflects your feelings (over the past 6 months):

- I do not have images (mental pictures) of myself being ill.
- I occasionally have images of myself being ill.
- I frequently have images of myself being ill.
- I constantly have images of myself being ill.
- I prefer not to answer

* 162. Please select a statement which best reflects your feelings (over the past 6 months):

- I do not have any difficulty taking my mind off thoughts about my health.
- I sometimes have difficulty taking my mind off thoughts about my health.
- I often have difficulty in taking my mind off thoughts about my health.
- Nothing can take my mind off thoughts about my health.
- I prefer not to answer

* 163. Please select a statement which best reflects your feelings (over the past 6 months):

- I am lastingly relieved if my doctor tells me there is nothing wrong.
- I am initially relieved but the worries sometimes return later.
- I am initially relieved but the worries always return later.
- I am not relieved if my doctor tells me there is nothing wrong.
- I prefer not to answer

* 164. Please select a statement which best reflects your feelings (over the past 6 months):

- If I hear about an illness I never think I have it myself.
- If I hear about an illness I sometimes think I have it myself.
- If I hear about an illness I often think I have it myself.
- If I hear about an illness I always think I have it myself.
- I prefer not to answer

* 165. Please select a statement which best reflects your feelings (over the past 6 months):

- If I have a bodily sensation or change I rarely wonder what it means.
- If I have a bodily sensation or change I often wonder what it means.
- If I have a bodily sensation or change I always wonder what it means.
- If I have a bodily sensation or change I must know what it means.
- I prefer not to answer

* 166. Please select a statement which best reflects your feelings (over the past 6 months):

- I usually feel at very low risk for developing a serious illness.
- I usually feel at fairly low risk for developing a serious illness.
- I usually feel at moderate risk for developing a serious illness.
- I usually feel at high risk for developing a serious illness.
- I prefer not to answer

* 167. Please select a statement which best reflects your feelings (over the past 6 months):

- I never think I have a serious illness.
- I sometimes think I have a serious illness.
- I often think I have a serious illness.
- I usually think that I am seriously ill.
- I prefer not to answer

* 168. Please select a statement which best reflects your feelings (over the past 6 months):

- if I notice an unexplained bodily sensation I don't find it difficult to think about other things.
- if I notice an unexplained bodily sensation I sometimes find it difficult to think about other things.
- if I notice an unexplained bodily sensation I often find it difficult to think about other things.
- if I notice an unexplained bodily sensation I always find it difficult to think about other things.
- I prefer not to answer

* 169. Please select a statement which best reflects your feelings (over the past 6 months):

- My family/friends would say I do not worry enough about my health.
- My family/friends would say I have a normal attitude to my health.
- My family/friends would say I worry too much about my health.
- My family/friends would say I am a hypochondriac.
- I prefer not to answer

For the following questions, please think about what it might be like if you had a serious illness of a type that particularly concerns you (e.g. heart disease, cancer, multiple sclerosis & so on). Obviously you cannot know for certain what it would be like; please give your best estimate of what you think might happen, basing your estimate on what you know about yourself and serious illness in general.

* 170. Please select a statement which best reflects your feelings:

- If I had a serious illness I would still be able to enjoy things in my life quite a lot.
- If I had a serious illness I would still be able to enjoy things in my life a little.
- If I had a serious illness I would be almost completely unable to enjoy things in my life.
- If I had a serious illness I would be completely unable to enjoy life at all.
- I prefer not to answer

* 171. Please select a statement which best reflects your feelings:

- If I developed a serious illness there is a good chance that modern medicine would be able to cure me.
- If I developed a serious illness there is a moderate chance that modern medicine would be able to cure me.
- If I developed a serious illness there is a very small chance that modern medicine would be able to cure me.
- If I developed a serious illness there is no chance that modern medicine would be able to cure me.
- I prefer not to answer

* 172. Please select a statement which best reflects your feelings:

- A serious illness would ruin some aspects of my life.
- A serious illness would ruin many aspects of my life.
- A serious illness would ruin almost every aspect of my life.
- A serious illness would ruin every aspect of my life.
- I prefer not to answer

* 173. Please select a statement which best reflects your feelings:

- If I had a serious illness I would not feel that I had lost my dignity.
- If I had a serious illness I would feel that I had lost a little of my dignity.
- If I had a serious illness I would feel that I had lost quite a lot of my dignity.
- If I had a serious illness I would feel that I had totally lost my dignity.
- I prefer not to answer

Health Behavior Questionnaire

Thank you for completing this survey. Your participation is greatly appreciated. As a final question, please indicate where this survey was taken for data analysis purposes of your responses.

* 174. Where did you take this survey?

- Online, in my preferred location
- Online, in a lab setting
- Other (please specify)

* 175. Please indicate your 5 or 6 digit participant id.
It is very important to enter this correctly as this is how your credit is assigned. Please note, this is different than your netid and your RUID. If you don't know your participant id visit researchpool.rutgers.edu

Appendix B. Coding Rules for "Who would you discuss this with?"

Variable: HSC4ACT3 will be coded into different domains: Mom, Dad, Parent, Sibling, Friend, Roommate, Doctor, Partner, Extended Family, Family

Rules:

- Plural references will be accounted for twice (e.g. brothers will be marked as a 2 in the sibling column)
- Any reference of "family" will be marked as a 1 in the family column
- Parents will be marked as 2 and parent will be marked as 1 in the parent column
- If they state father or mother a 1 will be designated in the parent column
- In any other instance where OR is used the first mention will be coded and the other one will not (e.g., my friend, or mom: a 1 will be designated in the friend column). The same will be noted for any use of OR even with three or more items (e.g. my mom, sister, friends or brothers: there would be a 1 in the mother category, a 1 in the sibling category, and a 2 in the friend category).

Appendix C. Coding Rules for First Action Self and Friend

Variables: HSC4ACT1 and HSFACT1

The variables will be coded into 9 separate yes or no columns.

For HSC4ACT1 they will be coded into: HSC4_AT1, 2, 3, 4, and so on.

For HSFACT1 they will be coded into: HSF_AT1, 2, 3, 4, and so on.

Please mark a 1 in each box for Yes and a 0 for No. Missingness should be left blank.

1. Rest/sleep or wait, do nothing (any mention of "if it persists", if it goes on, continues, after X days- this indicates waiting)
2. Use the restroom
3. Internet/Research
4. Home remedy (e.g. drink tea/ water/ something, eat something, hot water bottle, bundle up/warmth, walk around, etc)
5. OTC medications (e.g. medicine, pills, Tylenol, Advil, Pepto Bismol, etc)
6. Talk to a friend/ family member
7. See a healthcare professional (e.g. call a doctor, health center (generic), make an appointment for a later date, or as soon as possible)
8. ER/ Hospital (e.g. urgent care)
9. Other

Other rules:

- "Take something" should be counted as missingness. It is not specific
- If there is a sequence take the first step in the sequence and code it. For example: I would drink tea, use the restroom, and call a friend. Please only code the first step: drink tea. Unless, the steps after qualify or contradict the previous, for example, "I would tell them to wait to see a doctor, but take medication now). In this example you would code the OTC medications because they are telling you to take that action now.
- Any mention of "if it persists", if it goes on, continues, after X days- this indicates waiting

Example: " I would take Advil" You would mark a 1 in the HSC4_AT5 column for OTC medications and a 0 in each of the rest.