
HIM 1990-2015

2011

Associations between positive health behaviors and psychological distress

Marlaine Marie Monroig
University of Central Florida



Part of the [Psychology Commons](#)

Find similar works at: <https://stars.library.ucf.edu/honorstheses1990-2015>

University of Central Florida Libraries <http://library.ucf.edu>

This Open Access is brought to you for free and open access by STARS. It has been accepted for inclusion in HIM 1990-2015 by an authorized administrator of STARS. For more information, please contact STARS@ucf.edu.

Recommended Citation

Monroig, Marlaine Marie, "Associations between positive health behaviors and psychological distress" (2011). *HIM 1990-2015*. 1168.

<https://stars.library.ucf.edu/honorstheses1990-2015/1168>



ASSOCIATIONS BETWEEN POSITIVE HEALTH BEHAVIORS
AND PSYCHOLOGICAL DISTRESS

by

MARLAINE MARIE MONROIG

A thesis submitted in partial fulfillment of the requirements
for the Honors in the Major Program in Psychology
in the College of Sciences
and in the Burnett Honors College
at the University of Central Florida
Orlando, Florida

Spring Term 2011

Thesis Chair: Dr. Jeffrey Bedwell

ABSTRACT

Research examining the relationship between psychological distress and health behaviors is limited, as most of these studies examine one type of psychological distress and relate it to one type of health behavior. To address this limitation, an exploratory study was conducted that included online self-report measures of a wide range of positive health behaviors (Health Behavior Checklist; HBC) and a wide range of different types of psychological distress (Brief Symptom Inventory; BSI). Participants were 762 undergraduate students from the University of Central Florida (55% female). Results revealed that the total BSI score showed statistically significant negative correlations with the HBC total score and all four HBC subscales. Thus, participants reporting more overall psychological distress reported that they engaged in fewer positive health behaviors, across all health behavior subtypes. Stepwise regressions that examined the nine BSI subscales and their relationship with the HBC total score revealed that the Hostility subscale of the BSI was the strongest and most consistent predictor of positive health behaviors (in a negative direction). Stepwise regressions also revealed additional relationships of the BSI subscales of Depression and Phobia to particular HBC subscales. The results of this exploratory study provide an initial model on the relationships of particular types of psychological distress that are related to particular types of health behaviors, which will inform future studies on this important topic area.

DEDICATIONS

To my grandmother for her belief in me and belief that I will persevere through any adversity, for sharing her life experiences and showing me how to appreciate life and its opportunities.

To the Beta Theta Chapter of Lambda Theta Alpha, especially Line 11, for your everlasting effect throughout my college years...for helping me grow professionally and personally ...and for pushing me to never quit and to never let my dreams die.

For my family, especially those in Puerto Rico, may in some way this project and future accomplishments inspire them and future generations.

And most importantly, to my sister Nicole; for always being there, for knowing me, for loving me unconditionally and for being my biggest cheerleader.

ACKNOWLEDGEMENTS

First and foremost, thank you to my committee members; especially Dr. Bedwell who supported and guided me through my research. Your time, understanding, and support is appreciated more than you'll ever know. I have grown as a researcher and student and have you as my mentor and thesis chair to thank.

A special thank you to the faculty and my peers of the Ronald E. McNair Scholars program for their guidance from beginning to the end and for the amazing opportunities I've had with this project through the program. A special thanks to the McNair director Michael, for his dedication to each scholar and for genuinely caring about my success.

TABLE OF CONTENTS

INTRODUCTION	1
METHODS	6
<i>Participants</i>	6
<i>Measures</i>	7
<i>Procedure</i>	10
<i>Statistical Analyses</i>	11
RESULTS	12
DISCUSSION	13
TABLES	21
FIGURES	25
APPENDIX A	30
APPENDIX B	38
APPENDIX C	42
APPENDIX D	55
REFERENCES	72

INTRODUCTION

Positive health behaviors consist of those behaviors that people engage in order to maintain and improve health (Vickers, Conway, & Hervig, 1990). There is enthusiasm for further study in positive health behaviors because of the importance of these behaviors in helping individuals maintain their health and/or lessen the impact of disease. Similarly, poor health behaviors, such as lack of exercise, poor diet, and cigarette smoking, are linked to poor health outcomes, such as cancer, hypertension, diabetes, and arthritis. Estimates suggest that as many as 50% of all U.S. deaths are attributable to preventable poor health behaviors (Wachen, 2008).

There are different categories of positive health behaviors which represent a) behaviors that should help prevent the onset of illness (such as avoiding substances like tobacco and alcohol); b) avoidance or risk-taking behaviors (such as exposure to automotive and pedestrian hazards); c) behaviors that reduce the risk of straining the body's adaptive capacity (such as avoiding environmental hazards as well as harmful substances); and d) behaviors that could improve health by maintaining and enhancing well being (such as visiting the doctor regularly).

In the current study, the term "positive health behaviors" refers to all of these categories, which are all considered preventative behaviors in that they represent "activities undertaken by individuals who believe themselves to be in good health for the purposes of maintaining or improving health" (Vickers et al., 1990). It is important to note that, in recent studies, the term "health behaviors" has been used interchangeably with "lifestyle choices." This study focuses on health behaviors as mentioned in the definition above.

The effects of health behaviors on an individual's physical health have been well established. Positive health behaviors such as being physically active, eating a balanced diet,

getting a good night's sleep, not smoking, and drinking in moderation are considered important to an individual's health. There are countless studies in which positive health behaviors have shown to improve and prevent health problems. In the same, there are studies in which poor health behaviors have shown to cause health problems. For example, a recent study from Harvard Medical School indicated an association between poor diet and exercise with hypertension incidents in women (Forman, Stampfer, & Curham, 2009). In addition, relationships between smoking and cancer (Anderson & Naish, 2008), alcohol consumption and stroke (White, Polkinghorne, Cass, Shaw, Atkins & Chadban, 2009), and risky driving behaviors and crash risk (Keating & Halpern, 2008) have been reported.

The previous examples are just some of the many studies found in the literature concerning the effects of health behaviors on physical health. However, it is important to note that exercise and diet appear to be the most studied health behaviors in relation to physical health. Due to this vast pool of knowledge, it is clear that both healthy and unhealthy individuals can obtain substantial benefits from engaging in positive health behaviors. Due to this knowledge, there are many initiatives and programs being implemented to help motivate people to engage in these behaviors. The implementation of these programs can have a positive effect on the health of people (Mackinnon& Dwyer, 1993).

Despite the fact that health behaviors tend to occur in distinct clusters, most research has focused on single health behavior practices. Vickers (1990) provided evidence indicating that health behaviors occur in dimensions that can be reliably measured. Given that overall patterns of health behavior predict morbidity and mortality better than single behaviors, it appears that an increase in the understanding of these behaviors and related correlates will lead to better model

to explain the development of disease and illness and to better interventions to minimize health problems (Breslow, 1982).

The term “psychological distress” refers to discomfort that is experienced as a result of a psychological issue or disorder. It can cause internal conflicts and external stress that prevent a person from self-actualization and connecting with significant others (Guttman & Laporte, 2002). Psychological distress includes symptoms related to depression, anxiety, somatization, hostility, paranoid ideation, interpersonal sensitivity, obsession–compulsion, psychoticism, and phobic anxiety (Derogatis & Spencer, 1982),

Research examining the relationship between psychological distress and health behaviors is limited, and is mainly focused on specific/individual types of psychological distress or health behaviors. Hence, research on the distinct clusters of health behaviors mentioned above have not been examined in comparison to psychological health of distress. For example, yoga, a positive health behavior, has been linked to lowering an individual’s perceived stress, a type of psychological distress (Salmon, Lush, Jablonski, & Sephton, 2009).

Many of these studies have focused on individuals with a particular medical or psychological disorder. For example, there are studies on the health behaviors of cancer patients in remission (Findley & Sambamoorthi, 2009) and in patients with psychosis (Fusar, De Marco, Cavallin, Bertorello, Nicolasi, & Politi, 2009). In these cases, the health behaviors examined are specific to the health condition at hand; hence health behaviors as a whole are not explored. For example, studies of health behaviors of patients with psychosis involve compliance/non-compliance of their medication intake and therapy sessions. Consequently, whether those individuals engage in other health behaviors that affect overall mental health is not reported. In

addition, a substantial amount of this line of research focuses on older adults, and is gender-specific rather than cross-gender.

Overall, there does not appear to be any published study that has examined the relationship between a wide range of health behaviors and a wide range of types of psychological distress within a healthy non-psychiatric sample. To address this lack of research, a correlational study that included self-report measures of health behaviors and psychological distress was conducted. Analyses examined the relationships of different subscales for both health behaviors and psychological distress in addition to other factors that may affect health behaviors (e.g., access to health care, illness). Exploratory in nature, this study was an endeavor to discover the potential relationship between these variables and will potentially assist both psychology and health fields.

We hypothesized that there would be a statistically-significant negative correlation between overall self-reported positive health behaviors and overall psychological distress. Although the current study could not address causality, the relationship could theoretically occur in either causal direction. An individual who experiences psychological distress may be more prone to engage in poor health behaviors, hence not only affecting their mental health, but jeopardizing their physical health as well. In addition, studies have shown negative consequences of poor health behaviors such as lack of energy and lowered overall quality of life in terms of perceived happiness and satisfaction with themselves (Strine, Chapman, Balluz, Moriarty, & Mokdad, 2008). Therefore, an individual engaging in poor health behaviors can be more prone to psychological distress. This could also create a cycle as displayed in figure 2.

As previous research has not used the combination of assessment instruments that we used in the current study, the examination of relationships between particular types of

psychological distress and types of health behaviors was exploratory. An increase in the understanding of health behaviors, in particular their relation to psychological well-being, can lead to better interventions to minimize both physical and mental health problems.

METHODS

Participants

To ensure adequate statistical power, we collected data from 1,035 undergraduate students. All participants were recruited through Sona Systems - a web-based system for participation in research studies in the Psychology Department of the University of Central Florida. Participants were given academic credit toward a Psychology Department course within Sona Systems in accordance with their participation duration. Participants were excluded for the following reasons (in the following sequential order): 1) if they endorsed a current health condition that limited their physical activity (N = 31; 3.0%); 2) if they did not answer every question from the primary BSI and HBC measures (described below; N = 59; 5.7%); 3) if their score on the Infrequency Scale (described below) was greater than one (N = 74; 7.1%); 4) if their score from the MC (described below) was more than two standard deviations above the mean for all participants (N = 49; 4.7%); 5) if participants took less than ten minutes to complete the study (N = 53; 5.1%); 5) and if they did not give their age (N = 7; 0.7%). This resulted in a final sample of 762 participants that were included in the data analyses.

The average age of the 762 participants was 19.27 (SD = 3.16; range: 18 to 50); 55% (N = 416) were female and 45% (N = 346) were male. Of the 762 participants, 63% (N = 482) reported a race of Caucasian or White; 15% (N = 110) reported Latino or Hispanic; 9% (N = 70) reported Mixed/Other; 8% (N = 60) reported African American or Black; 4% (N = 33) reported Asian American; 0.3% (N = 2) reported Native Hawaiian; and 0.1% (N = 1) reported American

Indian/Alaskan; 0.5% (N = 4) of participants declined to report their race.

Of the 762 participants 71% (N= 551) reported they were Freshmen; 11% (N= 86) reported they were Juniors; 9% (N= 68) reported they were Seniors; 8% (N=60) reported they were Sophomores; 0.8% (N= 6) reported they were pursuing their second bachelors degree; and 0.1% (N=1) reported "Other" to this question. About 82% (N= 627) of the sample reported that they had health insurance, while 11% (N= 84) indicated that they did not have health insurance; 6.3% (N= 48) did not know; and 0.4% (N= 3) declined to answer.

Measures

Health Behavior Checklist:

The Health Behavior Checklist (HBC; Vickers, Conway, & Hervig, 1990) was used to measure health practices consistent with good health. This scale asks about preventative behaviors that are engaged in for the purpose of maintaining or improving health, undertaken by individuals who believe themselves to be in good health.

Vickers and colleagues (1990) reported the multidimensionality of health behaviors, which led to the development of the specific factors reported by this measure. The HBC consists of 40 items, of which 26 are used to assess four health behaviors. Participants were asked to indicate how well each item describes their typical behavior using a 5-point Likert scale ranging from 1 "strongly disagree" to 5, "strongly agree." The HBC measures four replicable factors:

1. The Wellness Maintenance and Enhancement dimension consists of items such as "I exercise to stay healthy."
2. The Accident Control dimension includes items like "I fix broken things around my home straight away."

3. The Traffic Risk Taking dimension consists of items such as "I drive after drinking." This item would be reversed scored, as a higher score on the scale actually reflects less traffic risk taking (i.e., healthier driving behavior).

4. The Substance Risk Taking dimension includes items like "I do not drink." Items are scored in a manner such that a higher score on this scale indicates less substance risk taking (i.e., healthier pattern of substance use).

Brief Symptom Inventory:

The 53-item Brief Symptom Inventory (BSI) is a self-report scale used to identify recent psychological symptoms. Its purpose is to identify self-reported clinically relevant psychological symptoms in adolescents and adults (Derogatis, 1993). The BSI asks participants to answer how much a specific problem has distressed them during the past week. Participants addressed each item on a 5-point scale ranging from 0 ("not at all") to 4 ("extremely"). It takes approximately 10 to 12 minutes to complete and can be used with individuals who have a minimum of a sixth grade reading level (Boule & Boss, 1991). The BSI is a shortened form of the 90-item Symptom Checklist-90-Revised (Derogatis, 1993).

The BSI provides scores on 9 dimensions: Somatization, Obsession-Compulsion, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism. The measure also provides three global indices: the General Severity Index (GSI) which is a weighted frequency score based on the sum of the ratings that the participant has assigned to each symptom; the Positive Symptom Total (PST) which is a frequency count of the number of symptoms the participant reported; and the Positive Symptom Distress Index (PSDI) which is a score reflecting the intensity of distress.

The reliability of the BSI Global Indices has been documented in several studies (e.g., Boulet & Marvin, 1991). However, important to note is the mix of evidence on the psychometric properties of the individual dimension scores. For example, the Depression dimension shows only a moderate correlation with the MMPI Depression scale ($r = .50$) (Boulet & Boss, 1991). Overall, the nine-dimensional profile has yet to achieve wide-spread acceptance as a differential diagnostic tool. Therefore, in the current study focused on the Global Indices, but also analyzed the separate dimensions in an exploratory fashion.

Infrequency Scale:

The measures used above assume that respondents understand the procedures and are both willing and able to provide reasonably accurate responses. However, because of the potential for inattention and/or carelessness in questionnaire responding, an 8-item scale modeled after the Infrequency Scale of Personality Research was used (Calkins, Curtis, Grove, & Iacono, 2004; Jackson, 1984). This scale helps identify/exclude participants that may be answering items randomly or without sufficient effort. An example of one of the questions is: “There have been a number of occasions when people I know have said to hello to me.” Any participant who answered “false” to this item would receive one point toward the scale score.

Abbreviated Marlowe-Crowne Social Desirability Scale:

To deal with social desirability in test behavior and the possibility that individuals might respond to self-report instruments in a way that misrepresents their behavior, items/ instruments that can measure such responses to discount or statistically adjust scores have been developed. The Abbreviated Marlowe-Crowne Social Desirability scale (MC), widely used to assess and control for response bias in self-report research, was used in this study. The MC scale is a short

form of a 33-item version. The 13-item form was found to have acceptable internal consistency reliability ($r = .76$) comparable to the standard form and other short forms (Fischer & Fick, 1993). The 13-item version of the Marlowe-Crowne Social Desirability Scale was also found to have strong reliability with the Marlowe-Crowe Standard form ($r=.93$).

Procedure

The entire study was taken online by participants within Sona Systems. Participants first completed an online informed consent form and were only directed to the first question of the study if they indicated consent. They were then asked questions on basic demographic information and factors thought to affect health behavior (see Appendix A). For example, one of these questions asks whether the participant has any current health condition that limits his or her physical activities. Because of the important role physical activity plays in pro-health behaviors, those participants who answered “yes” to this question were excluded from the data analysis, but were allowed to complete the questionnaire for academic credit. In addition, other factors thought to affect a person’s health behavior (e.g., participant’s access to health care, hours of work, number of children) were assessed. Following these introductory questions, the participants were presented with the following fixed order of the: MC scale, HBC, and BSI. Pairs of the 8 Infrequency Scale items were interspersed between the scales of interest to help assess continued attention to item content. The online study ended with a debriefing statement about the purpose of the study. .

Statistical Analyses:

The data was examined with three Pearson correlations to examine the relationship of the total Health Behavior Checklist scale with each of the three BSI global indices. Pearson correlations between HBC and BSI subscales were also analyzed. After correlations, five exploratory stepwise regressions were used to analyze the relationships between the nine BSI dimensions (as predictors) and the HBC total score and each of the four HBC subscales. An entry criteria of .05 and exit criteria of .10 was used. In cases in which there was more than one model, the model was chosen that explained at least 2% additional variance (at least .02 increase in r-squared) than the previous model with fewer variables.

RESULTS

The descriptive statistics for the BSI scales can be found in Table 1 and the descriptive statistics for the HBC can be found in Table 2.

Pearson correlations revealed that the HBC total score showed statistically significant negative correlations (all p 's < .001) with each of the three BSI global indices (see Table 3). All three of the BSI global indices showed similar small effect sizes in their relationship with the HBC total score (all r values around -.18). See Figure 3 for a scatter plot depicting the relationship between the HBC total score and the BSI Global Severity Index. The correlations between all BSI and HBC scales can be found in Table 3.

A stepwise linear regression of the nine BSI predictors on the HBC total score revealed that only the BSI Hostility subscale entered the model with a negative relationship with the HBC total score (Table 4). Regressions for the HBC subscales were also analyzed (Table 4 and Figure 5). When the same regression was examined for the HBC Wellness Maintenance and Enhancement subscale, again only the BSI Hostility subscale entered the model in a negative direction. In contrast, when the regression was examined for the HBC Accident Control subscale, only the BSI Depression subscale entered the model, also in a negative direction. When the regression was examined for the HBC Traffic Risk subscale, both the BSI Hostility (negative direction) and BSI Phobia (positive direction) subscales entered the model. Finally, when the regression was examined for the HBC Substance Risk subscale, both the BSI Hostility (negative direction) and BSI Phobia (positive direction) subscales entered the model.

DISCUSSION

Consistent with our first hypothesis, a statistically significant negative relationship was found between overall positive health behaviors and overall psychological distress. Although this correlational study cannot address causality, it is possible that proactively engaging in more positive health behaviors may decrease psychological distress. Due to the potential clinical significance of this possibility, future research should more directly examine the causal direction of this association.

The current study also provides interesting evidence of the important role hostility plays on health behaviors. Results of the stepwise regression revealed that the BSI subscale of Hostility stood out as the strongest predictor on three of the four HBC subscales (Wellness Maintenance, Traffic Risk and Substance Risk). Studies on the association between hostility and specific types of poor health behaviors have shown “higher levels of hostility were strongly associated with tobacco and marijuana smoking, increased alcohol consumption, and greater caloric intake” (Scherwitz, Perkins, Chesrtey, Hughes, Sydney, & Manolio, 1991). Hostile people may be at increased risk to partake in poor health behaviors, therefore “becoming at risk for various life-threatening illnesses” (Smith, 1992). Overall, results of the current study, as well as previous research, suggests that chronic hostility may be damaging to a person’s health and safety.

Only depression entered the model as a predictor for the HBC Accident Control Behavior subscale, also in a negative direction. Accident control behaviors are behaviors such as being careful, fixing broken things, knowing first aid, and checking the condition of vehicles and

electronics. We propose that depression may have a causal effect on accident control behaviors, although this is only a theory due to our correlational design. Poor concentration, having difficulty making decisions, loss of energy, and fatigue are symptoms of depression that can affect accident control behavior. Hence, a person that experiences depression may not make the best safety decisions and could therefore jeopardize their well-being. As it does not appear that any existing research has assessed this particular relationship, further exploratory research is needed.

The Traffic Risk and Substance Risk HBC subscales were more complex, as more than one BSI subscale entered the model. As mentioned above, the Hostility subscale was the strongest predictor (in a negative direction) of both the HBC Substance Risk and Traffic Risk subscales. However, the BSI subscale Phobia also stood out as a strong predictor of the HBC substance risk and traffic risk subscales, but unlike Hostility, Phobia was related to both of these scales in a positive direction. Hence, people who engage in healthier substance and traffic behavior are less hostile but more phobic.

Phobic individuals tend to be more anxious in general and anxious people are less likely to engage in risk-taking behaviors (Stewart, Zvolensky, Eifert, 2001). Although, using this logic, it remains unclear why the BSI subscales of Anxiety and Obsessive-Compulsive did not also enter the model as a predictor. Additionally, the zero-order correlations of Phobia with these two HBC scales did not even approach statistical significance (see Table 3), so it appears that the BSI Phobia subscale is only significantly (and positively) related to these health behaviors in the presence of corresponding low hostility (see figure 5).

This study had several limitations. One limitation is that the participants completed the study online in an unsupervised setting, which may have decreased the accuracy of their responses to the questions. We did partially control for this by excluding individuals that responded in the wrong direction to more than one Infrequency Scale item, which is usually a result of not adequately attending to item content. In addition, the study is limited to relatively young, healthy, and bright university students and may not generalize to the larger population. This type of sample may have restricted the range of psychological distress and health behaviors, which may be one reason why our effect sizes were relatively small.

However, despite these limitations, the preliminary findings of this study provide further support for the important association between psychological distress and health behaviors. These associations could have implications on the treatment of both physical and mental disorders. The association is complex when looking at the different subscales and further research is needed to replicate and better understand the cause of the finding. Given the complexity, this study provides evidence for the need to study health behaviors in distinct clusters as mentioned earlier. Overall, these preliminary findings can be the basis for much needed further research on this topic that could benefit both the medical and psychology fields.

TABLES

Table 1

Descriptive Statistics for the Brief Symptom Inventory

	MIN	MAX	MEAN	STD. DEVIATION
BSI GSI TOTAL	0.00	3.21	0.76	0.61
BSI PST TOTAL	0.00	53.00	23.19	12.68
BSI PSDI TOTAL	0.00	3.47	1.54	0.53
BSI ANX	0.00	22.00	3.95	3.96
BSI SOM	0.00	26.00	4.01	4.35
BSI PSY	0.00	19.00	3.35	3.85
BSI PAR	0.00	19.00	4.20	3.99
BSI O-C	1.00	23.00	6.86	4.37
BSI HOS	0.00	19.00	3.57	3.50
BSI PHOB	0.00	16.00	1.85	2.79
BSI DEP	0.00	37.00	5.99	7.73
BSI I-S	0.00	16.00	3.42	3.36

* A lower score indicates lower psychological distress

Table 2

Descriptive Statistics for the Health Behavior Checklist

	MIN	MAX	MEAN	STD. DEVIATION
HBC TOTAL	66.00	180.00	134.86	15.91
HBC WME	13.00	50.00	32.54	6.34
HBC AC	6.00	30.00	18.73	4.13
HBC TR	11.00	35.00	22.45	4.57
HBC SR	4.00	20.00	14.49	3.55

* A lower score indicates lower positive health behaviors

Table 3

Zero-order Pearson correlations between the Brief Symptom Inventory
and Health Behavior Checklist

	HBC TOTAL	HBC WME	HBC AC	HBC TR	HBC SR
BSI GSI (Total)	-.18**	-.10*	-.10*	-.10*	-.14**
BSI ANX	-.10*	-.05	-0.28	-.10*	-.10*
BSI SOM	-.13*	-.08*	-0.01	-.10*	-.10*
BSI PSY	-.11*	-.10*	-.10*	-.10*	-.10*
BSI PAR	-.11*	-0.03	-.05	-.13**	-.14**
BSI O-C	-.17 **	-.10	-.11*	-.12*	-.15**
BSI HOS	-.24 **	-.10*	-.12*	-.18**	-.17**
BSI PHOB	-.02	-.05	-.05	-0.04	-0.03
BSI DEP	-.17 **	-.10*	-.14**	-0.04	-.13**
BSI I-S	-.12*	-.10*	-.11*	-0.03	-.10*

* $p < .01$

** $p < .001$

*Correlation is significant at the 0.01 level (2tailed)

**Correlation is significant at the 0.05 level (2-tailed)

Table 4

Step-wise regression information for Brief Symptom and Health Behavior Checklist subscales.

	Beta	<i>t</i>	<i>P</i>	Adj. <i>R</i> ²	<i>F</i>	<i>p</i>
<u>HBC-Total Score</u>						
Predictors in Model						
BSI - Hostility	-1.02	6.31	<.001			
Overall Model				0.05	39.79	<.001
<u>HBC-WME</u>						
Predictors in Model						
Hostility	-0.19	2.85	0.005			
Overall Model				0.009	8.11	0.005
<u>HBC-AC</u>						
Predictors in Model						
BDI - Depression	-0.07	3.68	<.001			
Overall Model				0.02	13.55	<.001
<u>HBC-TR</u>						
Predictors in Model						
BDI - Hostility	-0.35	6.49	<.001			
BDI - Phobia	0.28	4.22	<.001			
Overall Model				0.05	21.71	<.001
<u>HBC-SR</u>						
Predictors in Model						
BDI - Hostility	-0.25	6.07	<.001			
BDI - Phobia	0.19	3.67	<.001			
Overall Model				0.04	18.68	<.001

FIGURES

Figure 1

Proposed Hierarchical Model of Health Behaviors

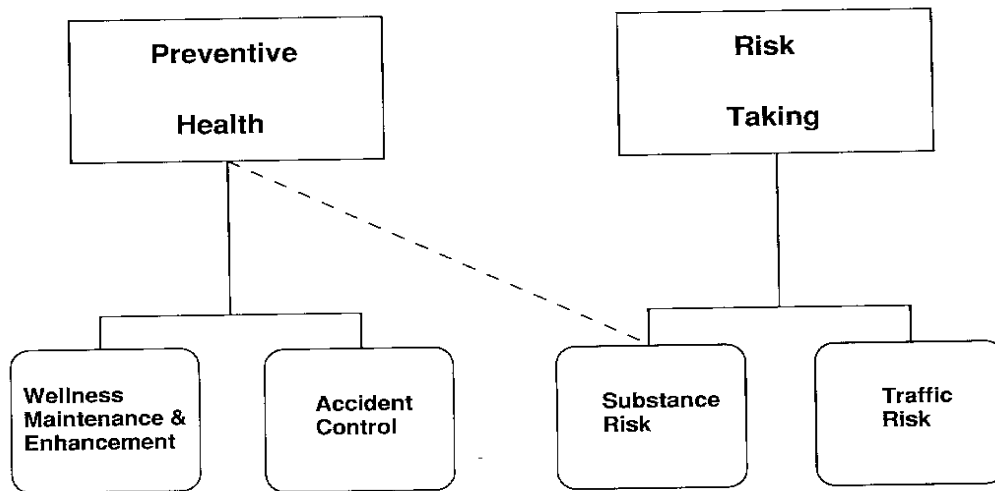


FIG. 1. Proposed Hierarchical Model of Health Behaviors.

Figure 2

Theorized Cycle of Poor Health Behavior and Psychological Distress

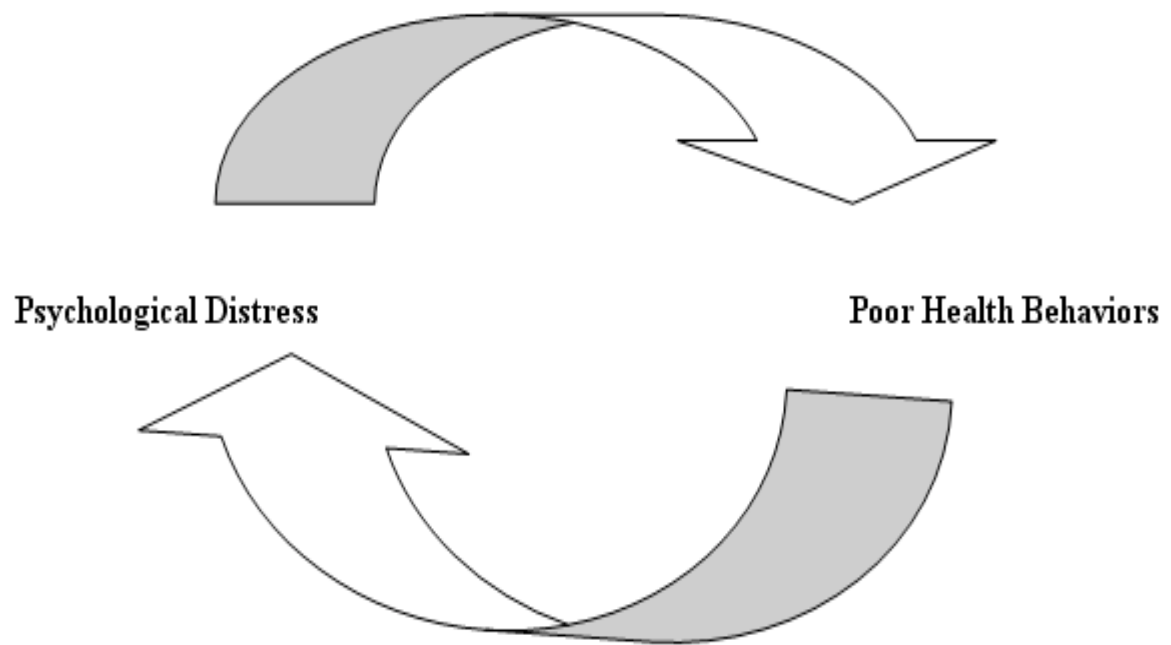


Figure 3

Relationship between the Health Behavior Checklist total score and the Brief Symptom Inventory Global Severity Index

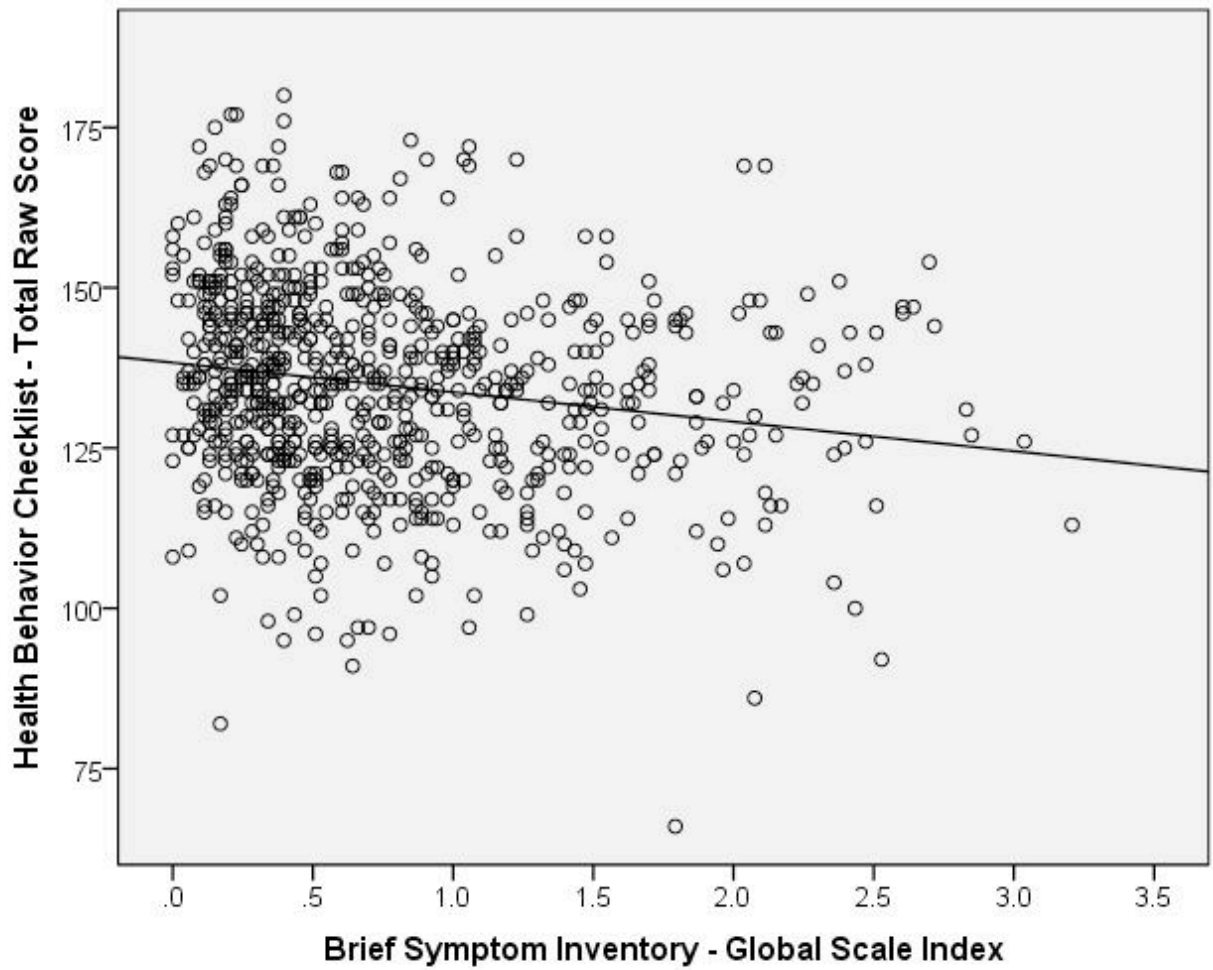


Figure 4

Relationship between the Health Behavior Checklist total score and

Hostility Brief Symptom Inventory Subscale

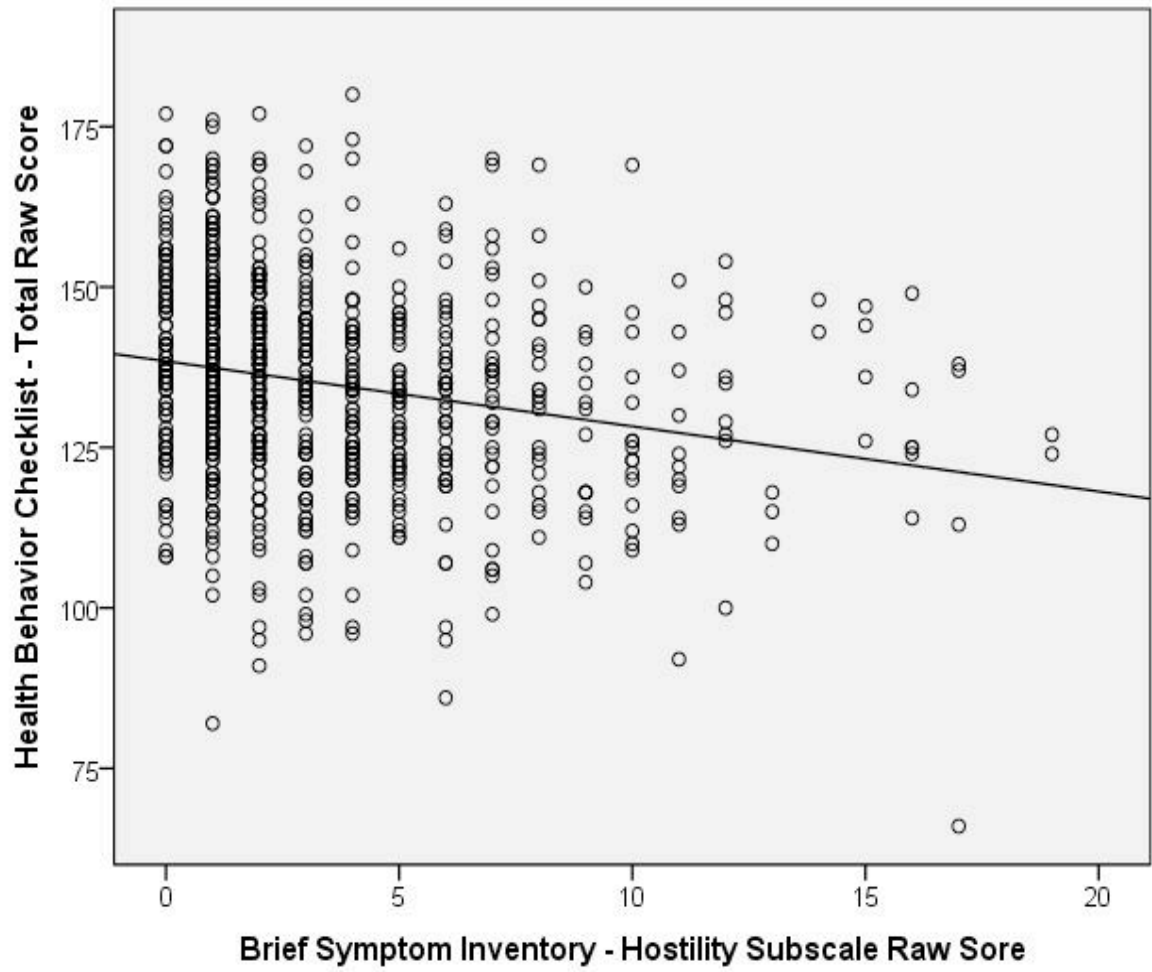
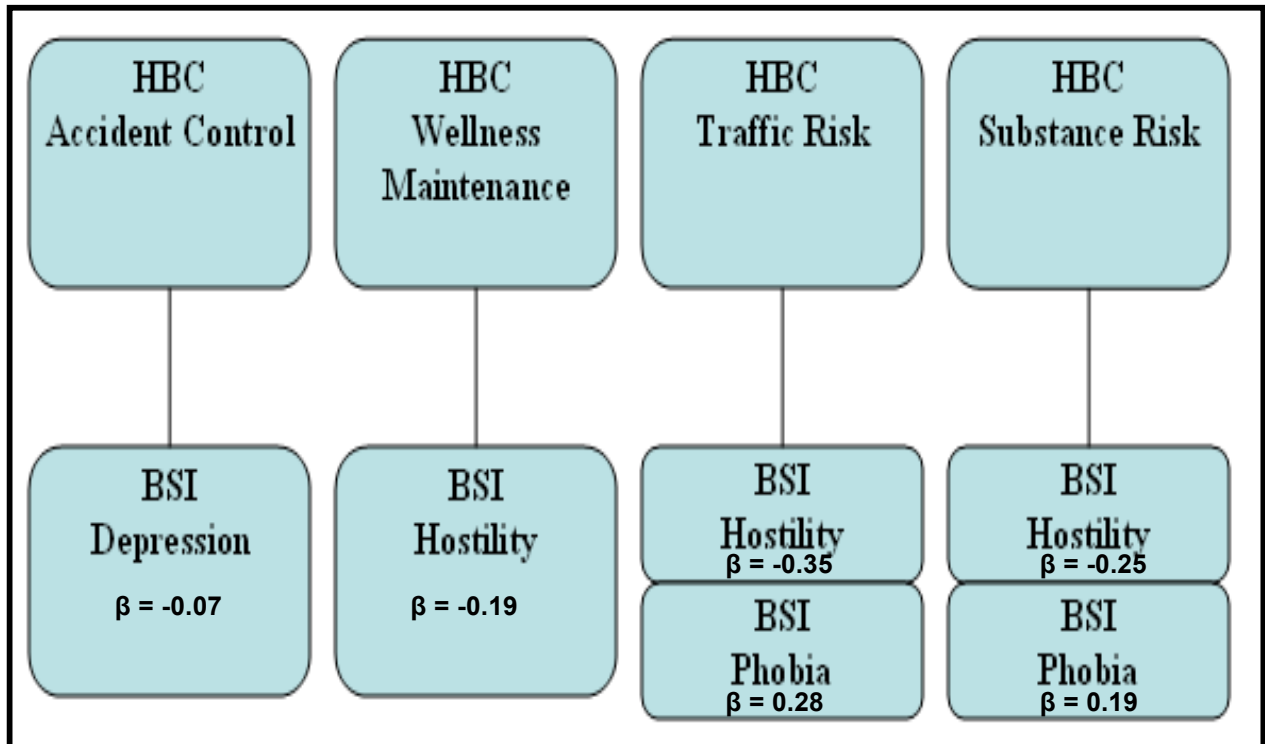


Figure 5

Results of the Stepwise Regressions of the Brief Symptom Inventory

Subscales that Predict Health Behavior Checklist



APPENDIX A

Demographic Questionnaire

Listed below are questions for this section of the survey. Please provide a response for every question. If you are given the option to decline to answer a question, then declining to answer is considered a response.

1. Please Enter Your Age

- 17-19
- 20-22
- 23-25
- more than 25

2. Please select you grade level

- Freshman
- Sophomore
- Junior
- Senior
- Senior-More than 4th year
- Second Bachelor Degree-Returning Student
- Graduate Student-Masters
- Graduate Student -Doctorate
- Other

3. Please specify what country you were born in

- Check this box if you do not want to provide an answer for this question

4. Please Select Your Race (check all that apply)

- White or Caucasian (not of Hispanic Origin)
- Black or African American (not of Hispanic Origin)

- Asian
- Hispanic or Latino
- American Indian or Alaskan Native
- Native Hawaiian or Other Pacific Islander
- Mixed/Other

- Check this box if you do not want to provide an answer for this question

5. If on the previous question for race you chose mixed/other, please elaborate

- Check this box if you do not want to provide an answer for this question

6. Please select your gender

- Male
- Female

- Check this box if you do not want to provide an answer for this question

7. Approximately how many miles do you live from campus?

8. Parent/s or guardian/s approximate yearly income

- \$0 to \$25,000
- \$25,000 to \$50,000
- \$50,000 to \$75,000
- \$75,000 to \$100,000
- \$100,000 or more

- Check this box if you do not want to provide an answer for this question

9. What is your total estimated yearly amount of financial aid/and or assistance for college expenses (total amount of grants, scholarships, school loans, support from parents)

- \$0 to \$5,000
- \$5,000-\$10,000
- \$10,000-\$15,000
- \$15,000-\$20,000
- \$20,000-\$25,000
- \$25,000-\$30,000
- more than \$30,000

Check this box if you do not want to provide an answer for this question

10. Do your parents (or guardians) currently have health insurance?

- Yes
- No
- Do Not Know

11. Do your parent/s or guardian/s visit the doctor at least once a year?

- Yes
- No
- Do Not Know

Check this box if you do not want to provide an answer for this question

12. Do your parents or guardians exercise regularly (at least 3 times per week)?

- Yes
- No
- Do Not Know

Check this box if you do not want to provide an answer for this question

13. Are you currently employed?

Yes

No

Check this box if you do not want to provide an answer for this question

14. If Yes, Please state your approximate annual income from all combined work employment (but not other sources such as school loans, grants, scholarships, etc)

\$0-\$8, 000

\$8,000-\$16,000

\$16,000-24,000

\$24,000-32,000

\$32,000-\$42,000

\$42,000-\$48,000

\$48,000 and more

Check this box if you do not want to provide an answer for this question

15. Please check all that apply:

I have a job

I have an internship

I volunteer regularly every week

I conduct research on campus

Check this box if you do not want to provide an answer for this question

16. If answered yes to either of two previous questions: Please specify the average hours per week for all.

0-10 hrs

10-20 hrs

20-30 hrs

30-40 hrs

- more than 40 hrs
- 25-30
- 30-35
- 35-40
- more than 40

Check this box if you do not want to provide an answer for this question

17. Do you currently have health insurance?

- Yes
- No
- Do Not Know

Check this box if you do not want to provide an answer for this question

18. If yes, please describe the type of insurance (catastrophic, comprehensive, etc):

Check this box if you do not want to provide an answer for this question

19. Do you have children?

- Yes
- No

Check this box if you do not want to provide an answer for this question

20. If yes to previous question, how many children do you have (under the age of 18)?

- 1
- 2
- 3
- 4
- more than 4

Check this box if you do not want to provide an answer for this question

21. If you have children, how many of your children reside in your household?

- 1
- 2
- 3
- 4
- more than 4

Check this box if you do not want to provide an answer for this question

22. Are you a full time student (taking more than 9 credits)?

- Yes
- No
- Do Not Know

Check this box if you do not want to provide an answer for this question

23. Do you currently have physical health implications or condition/s that significantly limit your daily activities?

- Yes
- No
- Do Not Know

Check this box if you do not want to provide an answer for this question

24. If yes to previous question, please explain:

Check this box if you do not want to provide an answer for this question

25. Indicate your first language spoken.

- English
- Spanish
- Chinese
- French
- Other

Check this box if you do not want to provide an answer for this question

26. Are you fluent in more than one language?

- Yes
- No

Check this box if you do not want to provide an answer for this question

27. There have been a number of occasions when people I know have said hello to me.

- True
- False

Check this box if you do not want to provide an answer for this question

28. I cannot remember a single occasion when I have ridden on a bus.

- True
- False

Check this box if you do not want to provide an answer for this question

APENDIX B

Abbreviated Marlowe-Crowne Social Desirability Scale

Listed below are questions for this section of the survey. Please provide a response for every question. If you are given the option to decline to answer a question, then declining to answer is considered a response.

If the statement is true or mostly true, as applied to you, click true (T) If a statement is false or not usually true, as applied to you, click false (F).

1. It is sometimes hard for me to go on with my work if I am not encouraged.

- True
- False

Check this box if you do not want to provide an answer for this question

2. I sometimes feel resentful when I don't get my way

- True
- False

Check this box if you do not want to provide an answer for this question

3. On a few occasions,I have given up doing something because I thought too little of my ability.

- True
- False

Check this box if you do not want to provide an answer for this question

4. There have been times when I felt like rebelling against people in authority even though I knew they were right.

- True
- False

Check this box if you do not want to provide an answer for this question

5. No matter who I'm talking to, I'm always a good listener.

- True
- False

Check this box if you do not want to provide an answer for this question

6. There have been occasions when I took advantage of someone.

- True
- False

Check this box if you do not want to provide an answer for this question

7. I'm always willing to admit it when I make a mistake.

- 1 True
- 0 False

Check this box if you do not want to provide an answer for this question

8. I sometimes try to get even rather than forgive or forget.

- True
- False

Check this box if you do not want to provide an answer for this question

9. I am always courteous, even to people who are disagreeable.

- True
- False

Check this box if you do not want to provide an answer for this question

10. I have never been irked when people expressed ideas very different from my own.

- True
- False

Check this box if you do not want to provide an answer for this question

11. There have been times when I was quite jealous of the good fortune of others.

- True
- False

Check this box if you do not want to provide an answer for this question

12. I am sometimes irritated by people who ask favors of me.

- True
- False

Check this box if you do not want to provide an answer for this question

13. I have never deliberately said something that hurt someone's feelings.

- True
- False

Check this box if you do not want to provide an answer for this question

APENDIX C

Health Behavior Checklist

Listed below are questions for this section of the survey. Please provide a response for every question. If you are given the option to decline to answer a question, then declining to answer is considered a response.

Indicate how well each item describes your typical behavior using a 5-point Likert scale ranging from 1 "strongly disagree" to 5, "strongly agree"

1. I exercise to stay healthy

- strongly disagree
- agree
- Neither agree nor disagree
- Agree
- Strongly agree

Check this box if you do not want to provide an answer for this question

2. I gather information on things that affect my health by watching television and reading books, newspapers, or magazine articles.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Check this box if you do not want to provide an answer for this question

3. I see a doctor for regular checkups.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Check this box if you do not want to provide an answer for this question

4. I see a dentist for regular checkups.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

Check this box if you do not want to provide an answer for this question

5. I discuss health with friends, neighborhoods, and relatives.

- 1 Strongly disagree
- 2 Disagree
- 3 Neither agree nor disagree
- 4 Agree
- 5 Strongly Agree

Check this box if you do not want to provide an answer for this question

6. I limit my intake of foods like coffee, sugar, fats, etc.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

Check this box if you do not want to provide an answer for this question

7. I use dental floss regularly.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

Check this box if you do not want to provide an answer for this question

8. I watch my weight.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

Check this box if you do not want to provide an answer for this question

9. I take vitamins.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

Check this box if you do not want to provide an answer for this question

10. I take health food supplements (e.g., protein, additives, wheat germ, bran, lecithin).

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree

Strongly Agree

Check this box if you do not want to provide an answer for this question

11. I keep emergency numbers near the phone.

Strongly disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

Check this box if you do not want to provide an answer for this question

12. I destroy old and unused medicines.

Strongly disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

Check this box if you do not want to provide an answer for this question

13. I have a first aid kit in my home.

Strongly disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

Check this box if you do not want to provide an answer for this question

14. I check the conditions of electrical appliances, the car, etc., to avoid accidents).

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

Check this box if you do not want to provide an answer for this question

15. I fix broken things around my home right away.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

Check this box if you do not want to provide an answer for this question

16. I learn first aid techniques.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly Agree

Check this box if you do not want to provide an answer for this question

17. I cross busy streets in the middle of the block.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree

Strongly Agree

Check this box if you do not want to provide an answer for this question

18. I take more chances doing things than the average person.

Strongly disagree

Disagree

Neither agree nor disagree

Agree

Strongly disagree

Strongly agree

Check this box if you do not want to provide an answer for this question

19. I speed while driving.

Strongly disagree

Disagree

Neither agree nor disagree

Agree

Strongly agree

Check this box if you do not want to provide an answer for this question

20. I take chances when crossing the street.

Strongly disagree

Disagree

Neither agree nor disagree

Agree

Strongly agree

Check this box if you do not want to provide an answer for this question

21. I carefully obey traffic rules so I won't have accidents.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Check this box if you do not want to provide an answer for this question

22. I cross the street against the stop light.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Check this box if you do not want to provide an answer for this question

23. I engage in activities or hobbies where accidents are possible (e.g., motorcycle, riding, skiing, using power tools, sky or skin diving, hang gliding, etc).

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Check this box if you do not want to provide an answer for this question

24. I do not drink alcohol.

- Strongly disagree
- Disagree

- Neither agree nor disagree
- Agree
- Strongly agree

Check this box if you do not want to provide an answer for this question

25. I don't take chemical substances which might injure my health (e.g, food additives, drugs, stimulants).

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Check this box if you do not want to provide an answer for this question

Listed below are questions for this section of the survey. Please provide a response for every question. If you are given the option to decline to answer a question, then declining to answer is considered a response.

Indicate how well each item describes your typical behavior using a 5-point Likert scale ranging from 1 "strongly disagree" to 5, "strongly agree"

1. I don't smoke

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Check this box if you do not want to provide an answer for this question

2. I avoid areas with high pollution

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Check this box if you do not want to provide an answer for this question

3. I eat a balanced diet

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Check this box if you do not want to provide an answer for this question

4. I get enough sleep

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Check this box if you do not want to provide an answer for this question

5. I choose my spare time activities to help me relax

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree

Strongly agree

Check this box if you do not want to provide an answer for this question

6. I pray or live by principles of religion

Strongly disagree

Disagree

Neither agree nor disagree

Agree

Strongly agree

Check this box if you do not want to provide an answer for this question

7. I avoid getting chilled

Strongly disagree

Disagree

Neither agree nor disagree

Agree

Strongly agree

Check this box if you do not want to provide an answer for this question

8. I watch for possible signs of major health problems (e.g., cancer, hypertension, heart disease).

Strongly disagree

Disagree

Neither agree nor disagree

Agree

Strongly agree

Check this box if you do not want to provide an answer for this question

9. I avoid high crime areas

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Check this box if you do not want to provide an answer for this question

10. I stay away from the places where I may be exposed to germs.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Check this box if you do not want to provide an answer for this question

11. I avoid over-the-counter medicines.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Check this box if you do not want to provide an answer for this question

12. I wear a seat belt when in the car.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree

Strongly agree

Check this box if you do not want to provide an answer for this question

13. I brush my teeth regularly.

Strongly disagree

Disagree

Neither agree nor disagree

Agree

Strongly agree

Check this box if you do not want to provide an answer for this question

14. I get shots to prevent illness

Strongly disagree

Disagree

Neither agree nor disagree

Agree

Strongly agree

Check this box if you do not want to provide an answer for this question

15. I drive after drinking

Strongly disagree

Disagree

Neither agree nor disagree

Agree

Strongly agree

Check this box if you do not want to provide an answer for this question

APENDIX D

Brief Symptom Inventory

Listed below are questions for this section of the survey. Please provide a response for every question. If you are given the option to decline to answer a question, then declining to answer is considered a response.

Read carefully and select the number of the response that best describes HOW MUCH PROBLEM HAS DISTRESSED OR BOTHERED YOU DURING THE PAST 7 DAYS INCLUDING TODAY. Choose only one number for each problem. Do not skip any items.

0= Not at all 1=A little bit 2=moderately
3=Quite a bit 4= Extremely

HOW MUCH WERE YOU DISTRESSED BY:

1. Nervous or shakiness inside.

- 0 Not at all
- 1 A little bit
- 2 Moderately
- 3 Quite a bit
- 4 Extremely

Check this box if you do not want to provide an answer for this question

2. Faintness or dizziness.

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

3. The idea that someone else can control your thoughts.

- Not at all
- A little bit
- Moderately

- Quite a bit
- Extremely
- Check this box if you do not want to provide an answer for this question

4. Feeling others are to blame for most of your troubles.

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely
- Check this box if you do not want to provide an answer for this question

5. Trouble remembering things.

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely
- Check this box if you do not want to provide an answer for this question

6. Feeling easily annoyed or irritated.

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely
- Check this box if you do not want to provide an answer for this question

7. Pains in the heart or chest.

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

8. Feeling afraid in open spaces or streets.

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

9. Thoughts of ending your life

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

10. Feeling that most people cannot be trusted

- Not at all
- A little bit

- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

11. Poor appetite

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

12. Suddenly scared for no reason

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

13. Temper outburst that you cannot control

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

14. Feeling lonely even when you are with people

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

15. Feeling blocked in getting things done

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

16. Feeling lonely

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

17. Feeling blue

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

18. Feeling no interest in things

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

19. Feeling fearful

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

20. Your feelings easily being hurt

- Not at all
- A little bit
- Moderately
- Quite a bit

Extremely

Check this box if you do not want to provide an answer for this question

21. Feeling that people are unfriendly and dislike you

Not at all

A little bit

Moderately

Quite a bit

Extremely

Check this box if you do not want to provide an answer for this question

22. Feeling inferior to others

Not at all

A little bit

Moderately

Quite a bit

Extremely

Check this box if you do not want to provide an answer for this question

23. Nausea or upset stomach

Not at all

A little bit

Moderately

Quite a bit

Extremely

Check this box if you do not want to provide an answer for this question

24. Feeling that you are watched or talked about by others

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

25. Trouble falling asleep

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

26. I sometimes feel sleepy or tired.

- True
- False

Check this box if you do not want to provide an answer for this question

Listed below are questions for this section of the survey. Please provide a response for every question. If you are given the option to decline to answer a question, then declining to answer is considered a response.

Read carefully and select the number of the response that best describes HOW MUCH PROBLEM HAS DISTRESSED OR BOTHERED YOU DURING THE PAST 7 DAYS INCLUDING TODAY. Choose only one number for each problem. Do not skip any items.

0= Not at all 1=A little bit 2=moderately
3=Quite a bit 4= Extremely

HOW MUCH WERE YOU DISTRESSED BY:

1. Having to check and double-check what you do

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

2. Difficulty making decisions

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

3. Feeling afraid to travel on buses, subways and trains

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

4. Trouble getting your breath

- Not at all
- A little bit
- Moderately
- Quite a bit

Extremely

Check this box if you do not want to provide an answer for this question

5. Hot or cold spells

Not at all

A little bit

Moderately

Quite a bit

Extremely

Check this box if you do not want to provide an answer for this question

6. Having to avoid certain things, places or activities because they frighten you

Not at all

A little bit

Moderately

Quite a bit

Extremely

Check this box if you do not want to provide an answer for this question

7. Your mind going blank

Not at all

A little bit

Moderately

Quite a bit

Extremely

Check this box if you do not want to provide an answer for this question

8. Numbness or tingling in parts of your body

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

9. The idea that you should be punished for your sins

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

10. Feeling hopeless about the future

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

11. Trouble concentrating

- Not at all
- A little bit
- Moderately
- Quite a bit

Extremely

Check this box if you do not want to provide an answer for this question

12. Feeling weak in parts of your body

Not at all

A little bit

Moderately

Quite a bit

Extremely

Check this box if you do not want to provide an answer for this question

13. Feeling tense or keyed up

Not at all

A little bit

Moderately

Quite a bit

Extremely

Check this box if you do not want to provide an answer for this question

14. Thought of death

0 Not at all

1 A little bit

2 Moderately

3 Quite a bit

4 Extremely

Check this box if you do not want to provide an answer for this question

15. Having urges to neat, injure or harm someone

- 0 Not at all
- 1 A little bit
- 2 Moderately
- 3 Quite a bit
- 4 Extremely

Check this box if you do not want to provide an answer for this question

16. Having urges to break or smash things

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

17. Feeling very self-conscious with others

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

18. Feeling uneasy in crowds, such as shopping or at a movie

- Not at all
- A little bit
- Moderately
- Quite a bit

Extremely

Check this box if you do not want to provide an answer for this question

19. Never feeling close to another person

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

20. Spells of terror or panic

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

21. Getting into frequent arguments

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

22. Feeling nervous when you are left alone

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

23. Others not giving you proper credit for your achievement

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

24. Feeling so restless you couldn't sit still

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

25. Feelings of worthlessness

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

26. Feeling that people will take advantage of you if you let them

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

27. Feelings of guilt

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

28. The idea that something is wrong with your mind

- Not at all
- A little bit
- Moderately
- Quite a bit
- Extremely

Check this box if you do not want to provide an answer for this question

REFERENCES

- Anderson, B., & Naish, W. (2008). Bladder cancer and smoking. part 1: Addressing the associated risk factors. *British Journal of Nursing (Mark Allen Publishing)*, 17(18), 1182-1186.
- Blume, A. W., Resor, M. R., Villanueva, M. R., & Braddy, L. D. (2009). Alcohol use and comorbid anxiety, traumatic stress, and hopelessness among Hispanics. *Addictive Behaviors*, 34(9), 709-713.
- Boulet, J., & Boss, M. W. (1991). Reliability and validity of the brief symptom inventory. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 3(3), 433-437.
- Broccoli, T. L., Sanchez, D. T., Friedman, M. A., & Osinubi, O. Y. (2009). Enhanced life functioning: Initial efficacy of a theoretical approach to integrate multiple health behavior interventions in young adults. *Preventive Medicine*, 48(6), 532-536.
- Clemens, S. L., Grant, B. M., & Matthews, S. L. (2009). A review of the impacts of health and health behaviors on women's alcohol use. *American Journal of Health Behavior*, 33(4), 400-415.
- Dube, S. R., Caraballo, R. S., Dhingra, S. S., Pearson, W. S., McClave, A. K., Strine, T. W., et al. (2009). The relationship between smoking status and serious psychological distress:

- Findings from the 2007 behavioral risk factor surveillance system. *International Journal of Public Health*, 54 Suppl 1, 68-74.
- Findley, P. A., & Sambamoorthi, U. (2009). Preventive health services and lifestyle practices in cancer survivors: A population health investigation. *Journal of Cancer Survivorship*, 3(1), 43-58.
- Fische, Fick, *Educational and Psychological Measurement*, Vol. 53, No. 2, 417-424 (1993)
- Forman, J. P., Stampfer, M. J., & Curhan, G. C. (2009). Diet and lifestyle risk factors associated with incident hypertension in women. *JAMA: Journal of the American Medical Association*, 302(4), 401-411.
- Frosch, Z. A. K., Dierker, L. C., Rose, J. S., & Waldinger, R. J. (2009). Smoking trajectories, health, and mortality across the adult lifespan. *Addictive Behaviors*, 34(8), 701-704.
- Fusar-Poli, P., De Marco, L., Cavallin, F., Bertorello, A., Nicolasi, M., & Politi, P. (2009). Lifestyles and cardiovascular risk in individuals with functional psychoses. *Perspectives in Psychiatric Care*, 45(2), 87-99.
- Graham, R., Kremer, J., & Wheeler, G. (2008). Physical exercise and psychological well-being among people with chronic illness and disability: A grounded approach. *Journal of Health Psychology*, 13(4), 447-458.
- Guttman, H., & Laporte, L. (2002). Alexithymia, empathy, and psychological symptoms in a family context. *Comprehensive Psychiatry*, 43(6), 448-455.

- Hootman, J. M., & Cheng, W. Y. (2009). Psychological distress and fair/poor health among adults with arthritis: State-specific prevalence and correlates of general health status, united states, 2007. *International Journal of Public Health, 54 Suppl 1*, 75-83.
- Jones, G. C., Rovner, B. W., Crews, J. E., & Danielson, M. L. (2009). Effects of depressive symptoms on health behavior practices among older adults with vision loss. *Rehabilitation Psychology, 54(2)*, 164-172.
- Keating, D. P., & Halpern-Felsher, B. (2008). Adolescent drivers: A developmental perspective on risk, proficiency, and safety. *American Journal of Preventive Medicine, 35(31)*, S272-SS277.
- Kołajtis-Dołowy, A., & Boniecka, I. (2007). Pro-health nutritional behaviors of selected group of students of the medical university of warsaw. *Roczniki Państwowego Zakładu Higieny, 58(1)*, 273-278.
- Li, C., Ford, E. S., Zhao, G., Strine, T. W., Dhingra, S., Barker, L., et al. (2009). Association between diagnosed diabetes and serious psychological distress among U.S. adults: The behavioral risk factor surveillance system, 2007. *International Journal of Public Health, 54 Suppl 1*, 43-51.
- McGuire, L. C., Strine, T. W., Vachirasudlekha, S., Anderson, L. A., Berry, J. T., & Mokdad, A. H. (2009). Modifiable characteristics of a healthy lifestyle and chronic health conditions in older adults with or without serious psychological distress, 2007 behavioral risk factor surveillance system. *International Journal of Public Health, 54 Suppl 1*, 84-93.

- Overholser, J. C., & Fisher, L. B. (2009). Contemporary perspectives on stress management: Medication, meditation or mitigation. *Journal of Contemporary Psychotherapy, 39*(3), 147-155.
- Salmon, P., Lush, E., Jablonski, M., & Sephton, S. E. (2009). Yoga and mindfulness: Clinical aspects of an ancient mind/body practice. *Cognitive and Behavioral Practice, 16*(1), 59-72.
- Scherwitz, L., Perkins, L; Chesrtey, M; Hughes, G; Sidney, S; Manolio, T. (1991). Hostility and Health Behaviors in Young Adults: The CARDIA Study. *American Journal of Epidemiology, 136* (2), 136-145
- Smith, W. (1992). Hostility and Health: Current status of a Psychosomatic Hypothesis. *Health Psychology, 11* (3), 139-150.
- Stewart, S., Zvolenskyb, M., Eifertc, G. (2001). Negative-reinforcement drinking motives mediate the relation between anxiety sensitivity and increased drinking behavior. *Personality and Individual Differences, 31* (2), 157-171
- Strine, T. W., Chapman, D. P., Balluz, L., & Mokdad, A. H. (2008). Health-related quality of life and health behaviors by social and emotional support: Their relevance to psychiatry and medicine. *Social Psychiatry and Psychiatric Epidemiology, 43*(2), 151-159.
- Tsai, J., Floyd, R. L., O'Connor, M. J., & Velasquez, M. M. (2009). Alcohol use and serious psychological distress among women of childbearing age. *Addictive Behaviors, 34*(2), 146-153.

- Vickers, R., Conway, T.L., & Hervig, L.K (1990) Demonstration of replicable dimensions of health behavior. *Preventative Medicine*, 19, 377-401.
- Wachen, R. M. (2008). Relationships between multiple appraisals of health risk and indices of physical and psychological health. ProQuest Information & Learning). *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 69 (5), 3282-3282.
- Wasylikiw, L., & Fekken, G. C. (2002). Personality and self-reported health: Matching predictors and criteria. *Personality and Individual Differences*, 33(4), 607-620.
- White, S. L., Polkinghorne, K. R., Cass, A., Shaw, J. E., Atkins, R. C., & Chadban, S. J. (2009). Alcohol consumption and 5-year onset of chronic kidney disease: The AusDiab study. *Nephrology, Dialysis, Transplantation: Official Publication of the European Dialysis and Transplant Association - European Renal Association*, 24(8), 2464-2472
- Yen, C., Yeh, M., Chen, C., & Chung, H. (2002). Predictive value of insight for suicide, violence, hospitalization, and social adjustment for outpatients with schizophrenia: A prospective study. *Comprehensive Psychiatry*, 43(6), 443-447.