



Original Article



College Students' Readiness to Change in Physical Inactivity Behavior using Perfection Quotient Behavioral Model

Manoj Sharma^{1*}, Meena Sehgal², Ram Lakhan^{3*}, Vinayak Nahar⁴, Amanda Wilkerson⁵, Micajah Daniels⁶, Amar Kanekar⁷, M. Allison Ford⁸

¹ Department of Social and Behavioral Health, University of Nevada, Las Vegas (UNLV), Department of Internal Medicine, Kirk Kerkorian School of Medicine at UNLV, Las Vegas, NV, USA

² Public Health Analyst (Independent), Atlanta, GA, USA

³ Department of Health and Human Performance, Berea College, KY, USA

⁴ Department of Health and Human Performance, University of Mississippi Medical Center, MS, USA

⁵ Department of Health Science, The University of Alabama, AL, USA

⁶ Department of Social and Behavioral Health, University of Nevada, Las Vegas, NV, USA

⁷ School of Counselling Human Performance, and Rehabilitation, College of Business, Health and Human Services, University of Arkansas at Little Rock, Little Rock, AR, USA

⁸ School of Applied Sciences, The University of Mississippi, MS, USA

*Corresponding authors:

Manoj Sharma, MBBS, Ph.D., MCHES®

E-mail: manoj.sharma@unlv.edu

ORCID: 0000-0002-4624-2414

Ram Lakhan, Dr. PH

E-mail: Ram_Lakhan@bera.edu

ORCID: 0000-0002-5267-5195

Abstract

Background: In 2022, about 25% of U.S. adults reported engaging in no leisure-time physical activity, and among those who reported being physically active, only 24% engaged in enough physical activity to meet both aerobic and muscle-strengthening physical activity guidelines. Physical inactivity has been linked to a higher risk of all-cause mortality, numerous chronic diseases, and negative mental health outcomes such as anxiety and depression. Physical inactive behavior is influenced by individual and environmental influences and becomes more acute in college students.

Objectives: In this study, we deploy a novel behavioral model called Perfection Quotient (PQ) and its components/ constructs Health Emotional Quotient (HEQ), Health X Quotient (HXQ), and Health Spiritual Quotient (HSQ) to explain the readiness to change for physical inactivity behavior in a sample of college students in Mississippi, USA.

Methods: Cross-sectional study was undertaken at a public university in Mississippi. A random sample of 572 was drawn from 5,000 students from the university registrar's list. A 37-item survey delivered via Qualtrics™

online survey software was administered among students aged ≥ 18 years. The survey included questions on the three constructs of PQ. The association between these three components and physical inactivity was assessed using binomial logistic regression.

Results: Of the survey respondents 51.2% (n=293) reported intentions to change their physical inactivity behavior. The mean scores of the constructs of the PQ model were, HEQ = 29.81 units (SD = 5.74; observed and possible range: 0-40), HXQ = 23.67 units (SD = 4.67; observed range: 0-34; possible 0-36), HSQ = 17.78 units (SD = 4.93; observed and possible range: 0-24), PQ = 71.38 units (SD 12.18; observed range: 0-97; possible 0-100). HEQ with its components of self-awareness, mood management, and self-motivation had an odds ratio of 0.947 (95% CI: 0.905 to 0.992) and was marginally negatively associated with the likelihood of readiness to change physical inactivity behavior ($p < 0.02$). HXQ with its components of cautiousness, independence, and competition had an odds ratio of 0.996 (95% CI: 0.944 to 1.051) and was not a significant predictor ($p > 0.05$). HSQ with its components of self-love and love for others was marginally positively associated with the likelihood of readiness to change physical activity behavior ($p < 0.005$) and had an odds ratio of 1.077 (95% CI: 1.022 to 1.135).

Conclusion: These findings suggest that the three constructs of the PQ model need to evolve further, instrumentation augmented, and further longitudinal studies designed.

Keywords: Health Behaviour, Perfection Quotient, Behaviour Change, Physical Inactivity

Introduction

Physical inactivity is an important public health concern and accounts for substantial morbidity, mortality, and disability worldwide (Carlson et al, 2018; Piercy et al., 2018). Regular engagement in physical activity is associated with a variety of health outcomes, including lower risk of all-cause mortality, prevention of numerous chronic diseases, and reduction in mental health outcomes such as anxiety and depression (Piercy et al., 2018). To accrue health benefits, the World Health Organization (WHO) recommends adults ages 18-64 accumulate at least 150 minutes of moderate-intensity or 75 minutes of vigorous-intensity aerobic physical activity each week and perform muscle-strengthening physical activity two or more days per week (WHO, 2020). Despite recommendations and evidence of the extensive benefits of regular physical activity, many adults are physically inactive or do not engage in sufficient amounts of physical activity. In 2018, approximately 25.4% of U.S. adults reported engaging in no leisure-time physical activity, and among those who reported being physically active, only 24% engaged in adequate physical activity to meet both aerobic and muscle-strengthening physical activity guidelines (Centers for Disease Control and Prevention [CDC], 2020). Similar patterns of physical inactivity are seen in developed countries worldwide, where the global age-standardized prevalence of physical inactivity is estimated to be 27.5% (Guthold et al., 2018).

Research consistently shows that physical activity levels decline with age (Farooq et al., 2018; Plotnikoff, et al, 2015). Notably, the transition from adolescence to young adulthood has been documented as a pivotal period to establish lifelong physical activity habits (Farooq et al., 2018; Plotnikoff, et al., 2015; Varma et al., 2017). Data from the Fall 2019 American College Health Association-National College Health Assessment suggest that current physical activity levels among college students mirror trends among adults, where 55.4% of college students have not engaged in enough moderate-intensity physical activity to meet recommended guidelines to acquire health benefits (American College Health Association, 2020). While the 2019 survey of college students is the most current survey done, a recent analysis of the data found that self-reporting of physical activity was positively associated with the percentage of students meeting physical activity guidelines (Bailey et al., 2022). To better understand the factors that contribute to physical activity levels during this important period, college students remain a key focus in physical activity research (Plotnikoff, et al., 2015). Previous physical activity interventions have documented success in increasing college students' physical activity levels, and cross-sectional

research has identified numerous correlates related to engagement in physical activity (Plotnikoff, et al., 2015; Rhodes et al., 2017). Previous physical activity-related research utilizing theoretical frameworks has primarily incorporated Bandura's social cognitive theory (Bandura, 2004) and Prochaska and DiClemente's transtheoretical model (Prochaska & DiClemente, 1982). However, despite the use of theoretical frameworks in this stream of research, many existing health promotion theories have conceptual problems or lack predictive power (Prestwich et al., 2014; Noar & Zimmerman, 2005). Further, a recent meta-analysis of physical activity-promoting interventions suggests that in previous research the explicit use of a theoretical framework did not moderate the impact of physical activity interventions for young adults or adults (Rhodes et al., 2017).

In recognition of the limitations of existing health promotion theoretical frameworks to understand physical activity behavior, the perfection quotient (PQ) behavioral model developed by Sharma (Sharma, 2018a; Sharma, 2018b) may be helpful to better understand readiness for change in physical inactive college students to engage in physical activity health behavior. PQ comprises four constructs: intelligence quotient (IQ), health emotional quotient (HEQ), health X quotient (HXQ), and health spiritual quotient (HSQ).

The intelligence quotient (IQ) is used to assess a person's ability to reason, plan, solve problems, think abstractly, learn new material, and make judgments and is commonly assessed on a grade-level scale (APA, 2013). Health education and promotion professionals have consistently utilized information about IQ to tailor materials to the needs of their audience. The behavior change intention for different levels of learners is calculated through reasoning, pragmatism, planning, abstract thinking, discernment, and comprehension (American Psychological Association [APA], 2013).

The health emotional quotient (HEQ) has been utilized to measure emotional intelligence (EQ). Unlike IQ which relies on the cognitive system, EQ is integrated within the limbic system of the brain and reflects the ability to detect emotions and mitigate them in addition to communicating with others and employing conflict resolution when needed (Eriksson, 2002; Salovey & Mayer, 1990). Typically, five constructs are used to calculate HEQ, however, two of the constructs geared towards relationships (e.g., empathy, managing relationships) have been excluded from PQ to focus on intrapersonal behavior (i.e., handling internal conflict) rather than interpersonal behaviors (i.e., handling relationships with others). The ability to identify one's own emotional state (e.g., self-awareness), deal with emotions appropriately as they arise (e.g., mood management), and manifest feelings towards pragmatic objectives (e.g., self-motivation) comprise HEQ in the PQ framework.

Additionally, readiness to change health behavior has been operationalized through the health spiritual quotient (HSQ) to encompass components of love and spirituality (Sharma, 2018b) (Eriksson, 2002) has disputed the importance of integrating love into healthcare services. To measure mental health and subjective well-being, HSQ consists of two factors. First, self-love is used to describe the endearment one has committed to their mind, body, and spirit. Secondly, the love one has for the others around them refers to the notion that someone may take better care of themselves to be healthy for the others around them.

Lastly, the health X quotient (HXQ) operationalizes three concepts about personality traits that have been suggested to lead to success (Robertson, 2007; Alport, 1937). First, the balance between cautiousness and spontaneity has been employed to estimate one's inclination to plan or act impulsively. Secondly, independence is characterized as someone who tends not to solicit help from others to make life decisions as well as preferring not to work in groups. Lastly, competition is expressed by one's frequency and ability to actively challenge oneself to meet their health goals. All three of these components comprise the HXQ component of the PQ framework.

The combination of all four concepts has been applied to develop the PQ ($PQ = IQ + HEQ + HSQ + HXQ$) to reflect an individual's degree of readiness for health behavior change. PQ has been proposed on the premise that efforts to work towards perfect health behavior can be measured regardless of the individual's conscious efforts (Sharma, 2018a; Sharma, 2018b). The PQ framework is a new and emerging behavioral model in health promotion and warrants investigation to explore the ability of the model to explain readiness to engage in health behavior change for a variety of health behaviors and among diverse populations. Thus, the purpose of this study was to explain readiness to change in physical inactivity in a sample of college students from Mississippi using PQ. Due to the

novelty of this framework in health promotion research, the findings from this study will provide information regarding the suitability of this model to explain behavior change readiness for physical inactivity among college students.

Methods

Design

The study used a cross-sectional study design. The independent variables were the constructs of PQ (operationalized on a metric scale), and the dependent variable was the readiness to change physical inactivity behavior (operationalized as a dichotomous variable – yes/no).

Participants

The study was undertaken in a public university in Mississippi, USA. A random sample of 572 was drawn from 5,000 students from the university registrar's list.

Sampling and Setting

The study used a random quota sample. A priori sample size was computed using G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) for a two-tailed test, at an $\alpha = 0.05$, power = 0.80, estimated odds ratio = 1.5, $\Pr(Y=1|X=1) H_0 = 0.5$, R^2 other $X = 0.5$, X Distribution = Normal, X parm $\mu = 0$ and X parm $\sigma = 1$. The calculation yielded a sample size of 415. The actual sample size was very close to it after accounting for missing values.

Ethical Considerations

The study was approved by the Institutional Review Board (IRB) of the Southern US public University (Ethics Approval #19x-045 approved as Exempt under CFR 46.101(b) (#2) dated September 18, 2018). The study's aims, data collection procedure, risks, and benefits were explained to the participants on a sheet in the online survey. No financial incentives were provided to the participants and participation was completely voluntary.

Instruments

The survey included questions on the three constructs namely HEQ (10 items for three constructs: self-awareness, mood management, and self-motivation), HXQ (9 items for three constructs: cautiousness, independence, and competitiveness), and HSQ (6 items for two constructs: self-love and love for others) of the Perfection Quotient (PQ) model and readiness for changing five behaviors (including physical inactivity behavior) (5 items) and seven items for demographic questions. The demographic items included gender, age, race/ethnicity, year in school, yearly household income, religion, and work for pay(yes/no). Please see Appendix A for the questionnaire. The Perfection Quotient (PQ) score ranged from 0 to 100 units. A score of 0-25 units indicated needing improvement of consciousness and signified a low perfection score; a score of 26-50 units indicated needing improvement of consciousness with a small perfection score; a score of 51-75 units indicated a moderate perfection score that could be better; a score of 76-100 units indicated high perfection score on the continuum of consciousness.

The face and content validity of the PQ scale was determined by a panel of experts ($n = 6$) in two rounds, the readability tests, based on Flesh Reading Ease Test was determined to be 62.4 (that is considered good) and the Flesh-Kincaid Grade Level Test was determined to be 6.4 (or sixth-grade level and thus comprehensible by all). The experts consisted of university professors, all of whom were well-versed with the target population ($n=6$), three were well-versed with the theory, three were well-versed with physical activity behavior, and all the experts

(n=6) had experience with instrumentation validation. Internal Consistency Reliability as calculated in this study sample showed Cronbach's alpha (≥ 0.70) for all subscales and the entire scale to be positive and significant. The construct validity was determined by Confirmatory Factor Analysis (CFA) using the maximum likelihood method and was computed in this study sample on each subscale. The results yielded one-factor solutions for each subscale with Eigenvalue >1.0 and Factor loadings > 0.28 (Sharma, 2018b, Sharma, 2023).

Data Collection

The data were collected between September 2018 to November 2018. The 37-item survey delivered via Qualtrics™ online survey software was administered among students aged > 18 years. The period of recruitment extended up to 3 weeks, the process included one initial email, which was followed by two reminders sent in the following 3-week period. All data were deidentified, and no personal identifiers were collected. The participation, including not completing the entire survey, was voluntary. One response per participant was allowed by using the "Ballot Box Stuffing" option. Data were only available to three researchers for analysis.

Data Analysis

Data cleaning was done by running frequency analysis and deleting records with errors. Categorical variables were summarized by frequencies and percentages and metric variables were summarized by means and standard deviations. Normality testing was done by inspection of histograms of metric variables. The association between the intention to change physical inactivity behavior by college students and the three components of PQ was assessed using binomial logistic regression. SPSS software Version 29.0.0.0(241) (IBM Corp, 2022) was used to produce the estimated percentages and odds ratios (OR). The significance level was set at 0.05.

Results

The overall response rate (the ratio of completed interviews to the sum of total interviews, terminated interviews, and refusals) was nearly 72% (n=410/572). There were different sample sizes due to partial responses. The study respondents had a mean age of 22.38 (SD = 6.19) years, 68.3% were females, 78.1% were White, the majority (82.8%) of the participants were undergraduates and the most common religion reported was Christianity (74.7%) (Table1).

Of the 531 survey respondents, 55.2% (n=293) reported intentions to change their physical activity behavior or counting the missing responses from the 572 respondents 51.2%. The mean scores of the three constructs of the PQ model were, HEQ = 29.81 units (SD = 5.74; observed and possible range: 0-40), HXQ = 23.67 units (SD = 4.67; observed range: 0-34; possible 0-36), HSQ = 17.78 units (SD = 4.93; observed and possible range: 0-24), PQ = 71.38 units (SD 12.18; observed range: 0-97; possible 0-100) (Table1). The mean of HEQ, HXQ and HSQ were computed, the average score for females was close to 29, 23, and 18 respectively, and did not differ significantly from the average score of male participants. Likewise, no significant differences were seen in the participant score for HEQ, HXQ, and HSQ when grouped by Race (White and Others) or by religion (Christianity and Others) (Table 2).

Binary Logistic Regression was used to compute Odds Ratio for readiness to behavior change for all participants, HEQ with its components of self-awareness, mood management, and self-motivation had an odds ratio of 0.947 (95% confidence interval 0.905 to 0.992), this was marginally negatively associated with the likelihood of readiness to change physical activity behavior ($p<0.02$). HXQ comprising of cautiousness, independence, and competition had an odds ratio of 0.996 (95% confidence interval 0.944 to 1.051) and was not a significant predictor ($p>0.05$). HSQ with components of self-love and love for others was marginally positively associated with the likelihood of readiness to change physical activity behavior ($p<0.005$) and had an odds ratio of 1.077 (95% confidence interval 1.022 to 1.135) (Table 3).

Table 1. Distribution of demographic characteristics of the population

Characteristics	Mean(\pm SD) (n)
Age	22.38 (6.19) (n=410)
HEQ	29.81 (5.73) (n=444)
HXQ	23.67(4.67) (n=432)
HSQ	17.78 (4.93) (n=412)
PQ	71.38 (12.18) (n=403)
	n (%)
Gender	(n=413)
Male	131 (31.7)
Female	282 (68.3)
Race	(n=415)
White	324 (78.1)
Other	91 (21.9)
Education	(n=413)
Undergraduate	342 (82.8)
Graduate	71(17.2)
Religion	(n=411)
Christian	307 (74.7)
Other	104 (25.3)
Behavior Change	(n=531)
Yes	293(55.2)
No	208(39.2)

Table 2

Distribution of Health Emotional Quotient, Health X Quotient, and Health Spiritual Quotient by characteristics of the study population

	n	HEQ Mean(\pm SD)	HXQ Mean(\pm SD)	HSQ Mean(\pm SD)
Gender				
<i>Female</i>	381	29.86 (5.25)	23.89 (4.49)	18.11 (4.82)
<i>Male</i>	187	29.71 (6.65)	23.21(5.01)	17.07 (5.11)
Race				
<i>White</i>	324	29.94 (5.23)	23.66 (4.29)	17.55 (4.79)
<i>Other</i>	91	29.33 (7.27)	23.78 (5.73)	18.60 (5.35)
Education				
<i>Undergraduate</i>	342	29.73 (5.95)	23.56 (4.79)	17.97 (4.95)
<i>Graduate</i>	71	30.32 (4.47)	24.253 (3.77)	17.06 (4.75)
Religion				
<i>Christian</i>	307	30.41 (5.17)	23.90 (4.13)	18.54 (4.53)
<i>Other</i>	104	27.95 (6.88)	23.04 (5.88)	15.53 (5.45)

Table 3
Binary Logistic Regression showing unadjusted Odds Ratio

Constructs	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
HEQ	-0.054	0.023	5.407	1	0.020	0.947	0.905	0.992
HXQ	-0.004	0.028	0.021	1	0.886	0.996	0.944	1.051
HSQ	0.074	0.027	7.747	1	0.005	1.077	1.022	1.135
Constant	0.855	0.680	1.579	1	0.209	2.351		

Note. Nagelkerke R^2 for the model is 0.037; Cox & Snell R^2 for the model is 0.027

Discussion

The study aimed to explain readiness to change in physical inactivity behavior in a sample of college students from Mississippi using a novel model Perfection Quotient (PQ). It was found that the Health Spiritual Quotient (HSQ) comprising of self-love and love for others was positively associated with the likelihood of readiness to change physical inactivity behavior by college students in this sample. This is in consonance with the theoretical framework that PQ suggests. There is also empirical evidence that spirituality helps with college students' health, especially physical activity (Davis, Badr, & Doumit, 2022; Peacock, 2022, Zaidi, 2020). However, it was not a very strong association. Hence, this construct needs to be bolstered. Such augmentation of the construct can be done by adding the spiritual concept of duty consciousness (Maharishi, 1992). In "duty consciousness," one considers one's duty to take care of the body and mind to serve society. On the other hand, when one is constantly focused on "rights" (e.g., health is my right) the person implies that someone else is responsible for taking care of their well-being. With an understanding of "duty consciousness," the likelihood of the readiness to change unhealthy behaviors to healthy behaviors will be easy. This dimension should be added to the HSQ by future researchers.

The Health X Quotient (HXQ) with its components of cautiousness (that measured the frequency and ability to plan things, not being driven by impulsivity, and being a planner as opposed to being unpredictable), independence (that measured the frequency and ability to function alone), and competition (that measured the frequency and ability to compete) were found to be not significant in explaining the readiness for physical inactivity behavior. Here the orientation of the constructs needs to be revisited. The originator of the model (Sharma, 2018b), after a more careful analysis of the data from this study, suggests three modified constructs in HXQ: (1) self-reflection (that is introspection or contemplation) as opposed to cautiousness which is more to do with planning, (2) self-reliance (that is beyond just being independent but encompassing no expectations from others), (3) self-competitiveness (as opposed to competing with others). In self-reflection, one needs to be one's own critic of one's behaviors. All of us have been endowed with the potential to introspect and this should be channelized for identifying and becoming ready for behavior change (Sharma, 2018c). There is also recent empirical evidence for this construct of introspection among college students for reducing their stress levels (Sharma, et al., 2022). The second construct in the revision suggested is that of self-reliance. Ultimately, all behavior change emanates from the self and thus one needs to strengthen the power and reliance on one's abilities to change or modify the behavior. The third construct in HXQ that the revision includes is self-competitiveness. Instead of competing with others the same energy can be mobilized to compete with oneself in improving one's behaviors which would be essential for readiness to healthy behavior change. Future researchers must operationalize this construct in this way and assess whether this orientation works better in explaining readiness for physical activity behavior change.

Finally, Health Emotional Quotient (HEQ) with its components of self-awareness, mood management, and self-motivation was marginally negatively associated with the likelihood of readiness to change physical inactivity behavior. Here once again there is a need to reify the constructs better. The following constructs have been suggested by the originator of the model (Sharma, 2018b), after a more careful analysis of the data from

this study in the revised version of PQ: (1) self-observation, (2) self-regulation of emotions, (3) observation of emotions in others, and (4) modulation of self-thinking based on emotions. Operationalizing HEQ in this way is also backed by emotional intelligence work (Salovey, & Mayer, 1990; Wang et al, 2020). Future researchers need to operationalize HEQ in this way to test it further empirically.

Implications for Practice

This study of a sub-population of university students on the different quotients of the PQ approach assesses several individual-level factors that may determine readiness/intent to behavior changes. Determining key influences of readiness to change health-related behaviors, such as physical activity, would help predict a range of health outcomes, medical treatment, patient recovery, and overall quality of life. Consequently, interventions can be designed to foster the perfection quotient. Pilot tests and efficacy trials of such interventions can be undertaken.

The HEQ needs to be operationalized in practice by enhancing the individual capabilities of self-observation, self-regulation of emotions, observation of emotions in others, and modulation of self-thinking based on emotions identified in self and others. The HXQ needs to be operationalized in practice by improving self-reflection (introspection), self-reliance, and self-competitiveness as opposed to competing with others. Finally, HSQ needs to be built in practice through inculcating self-love, love for others and promoting duty consciousness whereby one considers it one's duty to take care of the body and mind for service. However, a word of caution is warranted that not everyone is motivated or believes in the power of self on which most constructs of the perfection quotient are based. Further, there is an inherent danger in the aspect such as self-competitiveness which can lead to anomalies such as depression if one sets very high unachievable goals far from reality. Finally, there are also influences from the environment that shape behavior which needs to be considered.

Limitations of the Study

Our study had some limitations. First, we used self-reported data that is amenable to several biases such as dishonesty, recall, and acquiescence. However, the authors considered this as this was the best possible approach to collect data on attitudes, so we used it. Second, the respondents were asked for their intention or readiness to change the physical inactivity behavior as opposed to actual behavior change. Third, we used a cross-sectional study design due to time and resource constraints. In such a design since data in independent and dependent variables are being collected at the same time, causal inferences cannot be ascertained. Future studies should utilize experimental and longitudinal designs. Fourth, we did not test for test-retest (stability) reliability of our instrument. Once again, we encourage future researchers to test it with a modified version of the scale with reoriented constructs. Finally, our study was a single institution study in the US and hence generalizability is very limited.

Conclusions

PQ is an evolving model. This study found that one construct of PQ (HSQ) was significant and the other two (HXQ and HEQ) require further modifications. This cross-sectional study begins generating scientific evidence that would help inform the future researchers and practitioners and help develop it further. The findings suggest, instrumentation needs to be improved, more cross-sectional research with reoriented constructs be undertaken and subsequently followed by pilot, efficacy, and effectiveness intervention studies. This study was geared toward college students, but future research should focus on other types of study populations (for example older population), other institutions (for example worksites, schools, faith-based organizations, etc.), and respondents from different socio-economic statuses and cultures so as to widen the generalizability of the results.

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APPENDIX A

MEASURING PERFECTION QUOTIENT (PQ) FOR READINESS TO HEALTH BEHAVIOR CHANGE
IRB # _____

Directions: This survey is voluntary, which means you may choose not to complete it or not to answer individual questions. There is no direct benefit of this survey to you but your responses will help in developing effective health education programs. All data from this survey will be kept confidential. Please put an X mark by the response or fill the response that correctly describes your position. Thank you for your help!

Are you over 18 years old? No Yes **Condition: No Is Selected. Skip To: End of Survey**

1. Are you planning to make a behavior change in near future with regard to physical activity behavior?
 Yes No Don't know Not applicable
-
2. Are you planning to make a behavior change in near future with regard to healthy eating behavior?
 Yes No Don't know Not applicable
-
3. Are you planning to make a behavior change in near future with regard to smoking behavior?
 Yes No Don't know Not applicable
-
4. Are you planning to make a behavior change with regard to alcohol use behavior?
 Yes No Don't know Not applicable
-
5. Are you planning to make a behavior change with regard to any other health behavior?
 Yes No Don't know Not applicable

If yes, please specify other health behavior _____

	Never	Hardly Ever	Sometimes	Fairly Often	Very Often
About self-awareness					
6. I recognize when I am having positive feelings.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
.....					
7. I recognize when I am having negative feelings.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
.....					
8. I can tell apart different feelings.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
.....					

Never **Hardly
Ever** Sometimes **Fairly
Often** **Very
Often**

About mood management

9. I am able to manage my negative feelings.

 10. I am able to manage my positive feelings.

 11. I react appropriately under negative feelings.

 12. I react appropriately under positive feelings.

About self-motivation

13. I direct my feelings toward a goal.

 14. I overcome self-doubt in accomplishing any goal.

 15. I am confident that I can overcome any setbacks in accomplishing any goal.

About cautiousness

16. I am careful about acting impulsively.

 17. I like to plan things.

 18. I am a planner as opposed to being unpredictable.

Never Hardly Ever Sometimes Fairly Often Very Often

About independence

19. I like to work alone.
-
20. I do not rely on others for making my life decisions.
-
21. I like to draw attention to myself.
-

About competition with self

22. I like to compete with myself to achieve optimal health.
-
23. I want to be able to achieve optimal health.
-
24. I enjoy challenging myself toward becoming healthier.
-

About self-love

25. I love myself to take better care of my body.
-
26. I love myself to take better care of my mind.
-
27. I love myself to take better care of my spirit.
-

About love for others around oneself

28. I want to take better care of my body so I can take care of others.
-

	Never	Hardly Ever	Sometimes	Fairly Often	Very Often
29. I want to take better care of my mind so I can take care of others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

30. I want to take better care of my spirit so I can take care of others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Demographic questions

31. How do you identify your gender? Male
 Female
 Other, _____

32. What is your age? _____ years

33. What is your race/ethnicity? White or Caucasian American
 Black or African American
 Asian or Asian American
 American Indian
 Latino or Hispanic American
 Other _____

34. What is your year in school? First year undergraduate
 Second year undergraduate
 Third year undergraduate
 Fourth year undergraduate
 Fifth year or more undergraduate
 Graduate
 Professional degree

35. Do you work for pay? No
 Yes, _____ average hours/week (put a single number not a range)

36. What is your yearly household income? Less than \$ 50,000
 \$ 50,001 to \$ 100,000
 \$100,001 to \$150,000
 \$150,001 to \$200,000
 More than \$200,000

37. What is your religion? Christian
 Muslim
 Hindu

- Buddhist
- Secular
- Agnostic
- Atheist
- Other _____

.....

SCORING

Flesch Reading Ease: 62.4

Flesch-Kincaid Grade level: 6.4 [*Proxy measure of IQ*]

Item 1-5. Use Yes [1] and No [0] or Don't know [0] for logistic regression modeling [*Can be modified for specific health behaviors that can be more specifically defined, as needed*]

Self-awareness construct: Measures the frequency and ability of knowing positive and negative feelings before they arise and ability to distinguish between feelings through items 6-8. Measured on a scale of Never [0], Hardly Ever [1], Sometimes [2], Fairly Often [3], Very Often [4]. Possible range 0-12 units.

Mood management construct: Measures the frequency and ability of managing and reacting appropriately to positive and negative feelings through items 9-12. Measured on a scale of Never [0], Hardly Ever [1], Sometimes [2], Fairly Often [3], Very Often [4]. Possible range 0-16 units.

Self-motivation construct: Measures the frequency and ability of directing feelings toward a goal while overcoming self-doubt and inaction through items 13-15. Measured on a scale of Never [0], Hardly Ever [1], Sometimes [2], Fairly Often [3], Very Often [4]. Possible range 0-12 units.

Health Emotional Quotient (HEQ): Items 6-15 with a score of 0-40 units can be summed to derive health emotional quotient (HEQ).

Cautiousness construct: Measures the frequency and ability to plan things, not be driven by impulsivity and being a planner as opposed to being unpredictable through items 16-18. Measured on a scale of Never [0], Hardly Ever [1], Sometimes [2], Fairly Often [3], Very Often [4]. Possible range 0-12 units.

Independence construct: Measures the frequency and ability to function alone, not relying on others in making life decisions and drawing attention to self through items 19-21. Measured on a scale of Never [0], Hardly Ever [1], Sometimes [2], Fairly Often [3], Very Often [4]. Possible range 0-12 units.

Competition with self construct: Measures the frequency and ability to compete with oneself to achieve optimal health, liking for achieving optimal health and challenging oneself toward becoming better through items 22-24. Measured on a scale of Never [0], Hardly Ever [1], Sometimes [2], Fairly Often [3], Very Often [4]. Possible range 0-12 units.

Health X Quotient (HXQ): Items 16-24 with a score of 0-36 units can be summed to derive health X quotient (HXQ).

Self-love construct: Measures the frequency and ability to love oneself to care about body, mind and spirit through items 25-27. Measured on a scale of Never [0], Hardly Ever [1], Sometimes [2], Fairly Often [3], Very Often [4]. Possible range 0-12 units.

Love for others around oneself construct: Measures the frequency and ability to take better care of one's body, mind and spirit so that one can take better care of others through items 28-30. Measured on a scale of Never [0], Hardly Ever [1], Sometimes [2], Fairly Often [3], Very Often [4]. Possible range 0-12 units.

Health Spiritual Quotient (HSQ): Items 25-30 with a score of 0-24 units can be summed to derive health spiritual quotient (HSQ).

Perfection Quotient (PQ): Summation of items 6-30 with a score of 0-100 units. Score of 0-25 units indicates needing improvement low perfection score; score of 26-50 units indicates needing improvement small perfection score; score of 51-75 units indicates moderate perfection score that can be better; score of 76-100 units indicates high perfection score on the continuum and readiness for behavior change.

Items 31-38: Sample demographic questions [*Can be adapted depending on target population*].