Fear versus hope appeals in health advertisements: the moderating role of individual characteristics on subsequent health decisions in Chile

Track: Consumer behavior

Abstract

Obesity weighs on Latin America after its success with the fight against hunger. Recent research in the U.S. reveal that fear versus hope appeals in health advertisements are more effective in generating healthy eating intention and physical activity intention. Unfortunately, there is no research that analyzes the effectiveness of fear appeals in health advertisements in Latin America. Additionally, no studies have been made of how the effectiveness of fear advertisements varies across individuals and under what circumstances fear advertisements has the potential to influence health-related choices. Using a Chilean sample, this study aims to find out in which situations related to different individual characteristics, fear advertising works as a powerful tool in generating healthy eating intention and physical activity intention. Based on the results of this study, it would be better to call for fear in the situations where the audience is expected to be high fast-food consumption and perceived body overweight. Hope advertising would be more effective in situations where the audience is expected to be high in subjective norm and/or self-efficacy.

Keywords: obesity; healthy eating intention; physical activity intention; health advertisements; fear; hope.

1. Introduction

Obesity weighs on Latin America after its success with the fight against hunger. The prevalence of overweight and obese adults and adolescents has increased markedly in the last decades. Adults in Mexico and Chile present similarly high rates of obesity (around 35%) whereas in Brazil and Colombia, the rates are around 20% and 16.5%, respectively. Apart from the health risks linked to obesity, it also puts a significant social and economic burden on society. In the last decade there has been a proliferation of national policy initiatives in Latin American countries focused on physical activity and healthy eating (Kain et al., 2014; Pratt et al., 2014). Despite these efforts, in Latin America the prevalence of obesity has significantly increased.

In the U.S., Krishen and Bui (2015) reveal that fear-based framing of health messages can lead to positive decision intentions, thus helping individuals make better health-related choices. Fear is a powerful emotion making individuals change their behavior. Advertising, especially health advertising, is meant to be effective and aims to change an individual's

behaviors towards his/her health. Thus, fear advertising may be seen as an effective tool for changing people's attitudes towards healthy eating and participating in physical activity. Unfortunately not enough is known in Latin America about the potential fear mongering could have in health advertisements because there is no research analyzing its effectiveness in the region, and fear mongering advertising has seldom been employed in the region. Consequently, the first objective of this research is to examine the effects of fear-based framing of health advertisements on Chilean adults' decision making around their health. Chile has one of the highest obesity rates in Latin America. It is also the country with one of the highest rates of adults with hypertension or high blood pressure in Latin America (Jarroud, 2013).

A major limitation of Krishen and Bui (2015) study was that they treated individuals as a homogenous group. No studies have been made of how the effectiveness of fear based advertisements varies across individuals with different characteristics and under what circumstances fear based advertisements has the potential to influence health-related choices. In fact, Krishen and Bui (2015) recommend that future research can include the moderating roles of self-esteem, self-control, and other individual characteristics on subsequent health decisions. Thus, the second objective of this research is to bridge this gap. This study aims to find out in which situations related to different individual characteristics, fear mongering advertisements work as a powerful tool in generating change in behaviors.

2. Conceptual framework

2.1. Fear versus hope appeals in health advertisements

Recent studies have found evidence that fear works (see Pechmann and Catlin, 2016, for a review). In the U.S., Krishen and Bui (2015) reveal that fear-based framing of health messages can lead to positive decision intentions, thus helping individuals make better future health-related choices. The question then arises; do cultural aspects affect the effects of fear versus hope appeals in health advertisements? Latin America has higher levels of uncertainty avoidance than the U.S. (Hofstede, 2001). The extent to which the members of a culture feel threatened by ambiguous or unknown situations and have created beliefs and institutions that try to avoid these is reflected in the score on uncertainty avoidance. Matsumoto (1989) suggest that because cultures with high levels of uncertainty avoidance have beliefs and institutions to deal with fear, people may tend not to recognize fear, or attenuate attributions of intensity when expressed or perceived. As there is no information on the potential of fear appeals in health advertisements in Latin America, to examine the effects of fear-priming, the first hypothesis is proposed:

H1. In Chile, when subjects view a fear advertisement, they will be more like to report greater (a) healthy eating intentions, and (b) physical activity intentions than when they view a hope advertisement.

2.2. The moderating role of individual characteristics

A major limitation of Krishen and Bui (2015) study was that they treated individuals as a homogenous group. No studies have been made of how the effectiveness of fear advertisements varies across individuals and under what circumstances fear advertisements has the potential to influence health-related choices. This study aims at figuring out if different reactions from people with different characteristics will affect the results of fear advertising. Krishen and Bui (2015) suggest that such characteristic as self-esteem, self-control among others, should be considered in future research.

2.2.1. Fear appeals and avoid an aversive state

Fast-food is generally low-cost and the promotion is active, referring to consumer's social surroundings and behaviors (Bloom and Novelli, 1981). Fast-food has led to increased access, consumption and obesity (Grier and Kumanyika, 2008). In a hope environment, a favorable outcome could occur (e.g., healthy living). In a fear environment, a negative outcome could be avoided or solved (e.g., death) (MacInnis and De Mello, 2005). Fear engenders a desire to escape from or avoid an aversive state (Baumgartner et al., 2008). An aversive state is a state where contradictories exist. Fear as a primary aversive emotion arises in situations of threat and danger to the organism (the individual), and enables to respond to them adaptively (Jarymowicz and Bar-Tal, 2006). Consequently, the effects of fear (vs. hope) appeals in health advertisements on healthy eating intention and physical activity intention could be stronger among individuals who are high rather than low in frequency of fast-food consumption. Hence:

H2. In Chile, the effects of fear (vs. hope) appeals in health advertisements on (a) healthy eating intentions and (b) physical activity intentions are stronger among individuals who consume fast-food more frequently than other.

Researchers have shown that overweight individuals are more likely to be present-biased (Borghan and Golsteyn, 2006). Present-biased individuals tend to value more immediate rewards than rewards that would occur over time. In the case of overweight individuals, the immediate action of not eating or physical activity would be relatively more rewarding if they feel rewarded by doing so. The reward could be psychological or physical, but as long as it is immediate, it is highly valuated. Fear based health advertising could thus have a stronger effect on overweight individuals as the changes in behavior would be immediate, whereas hope advertising would be more effective in the long-term. Hence:

H3. In Chile, the effects of fear (vs. hope) appeals in health advertisements on (a) healthy eating intentions and (b) physical activity intentions are stronger among individuals who are overweight.

2.2.2. Fear appeals and reinforcement

The effects of fear in terms of past behavior have been researched especially in the decision making of individuals that lead to some sort of pain. If an individual remembers a painful event/time in their life, he/she is likely to act against similar events in the future (Mowrer, 1939). Fear appeals could be used in a manner which allows fear reinforcing appropriate past behavior (Soames, 1988). Fear could thus work as reinforcement in making healthy decisions. Hence:

H4. In Chile, the effects of fear (vs. hope) appeals in health advertisements on (a) healthy eating intentions and (b) physical activity intentions are stronger among individuals who have higher past behavior.

2.2.3. Hope appeals and social support

Social support is an individual's general support or specific support behaviors from people in the social network, which improves their functioning. Social support is a great factor affecting eating and physical activity intentions and behaviors of a person (Ajzen, 1985; Latimer and Ginis, 2005). The effects of subjective norm and social influences regarding physical activity could be enhanced if the individual is motivated more by hope (positive goals are expected) rather than fear (negative outcomes should be avoided). Therefore, hope (vs. fear) appeals could be more effective in cases where individuals have high subjective norms and social influences regarding physical activity. Hence:

H5. In Chile, the effects of hope (vs. fear) appeals in health advertisements on (a) healthy eating intentions and (b) physical activity intentions are stronger among individuals who have higher subjective norms.

H6. In Chile, the effects of hope (vs. fear) appeals in health advertisements on (a) healthy eating intention and (b) physical activity intention are stronger among individuals who have more social influences regarding physical activity.

2.2.4. Hope appeals and self-concept

The emotion of hope arises when a concrete positive goal is expected. It consists of a cognitive element of expecting and an affective element of feeling good about the expected events or outcomes (Bar-Tal, 2001). Hope is a positive motivational state. Hopeful individuals enjoy goal pursuit and are more intrinsically motivated (Rego et al., 2014). In order to reach such

goals and feel hope, an individual must be rather determined and goal-oriented, and possess some self-efficacy, self-esteem and self-control.

Synder (2002) concludes that hope messaging can contribute to goal-oriented behaviors geared towards enhancing already-satisfactory states rather than unsatisfactory states alone. Hope requires mental representations of positively valued abstract future situations and more specifically, it requires setting goals, planning how to achieve them, use of imagination, creativity, cognitive flexibility, and mental exploration of novel situations (Jarymowicz and Bar-Tal, 2006). Self-efficacy is defined as an individual's beliefs about his capabilities to perform well in situations that have an effect on his life. Self-efficacy determines how individuals feel, think, motivate themselves and behave in those situations. People with high self-efficacy are determined and motivated whereas people with low self-efficacy doubt their capabilities, are not committed to pursue their tasks and goals, see difficulties as obstacles, and difficult tasks as personal threats (Bandura, 1994). For example, Mowen et al. (2004) comment that individuals with higher self-efficacy experience lower levels of fear.

For intrinsically motivated people (e.g., individuals who are high in self-esteem and/or self-control), hope appeals in health advertisements may work as a better motivator. People who are more likely to be externally motivated (e.g., individuals who are low in self-esteem and/or self-control), may find fear more appealing, due to the stronger emotional effects fear has on an individual than hope. Hence:

H7. In Chile, the effects of hope (vs. fear) appeals in health advertisements on (a) healthy eating intentions and (b) physical activity intentions are stronger among individuals who have higher levels of self-efficacy.

H8. In Chile, the effects of hope (vs. fear) appeals in health advertisements on (a) healthy eating intentions and (b) physical activity intentions are stronger among individuals who have higher levels of self-esteem.

H9. In Chile, the effects of hope (vs. fear) appeals in health advertisements on (a) healthy eating intentions and (b) physical activity intentions are stronger among individuals who have high levels of self-control.

3. Research design

3.1. Procedures

Some measures included in the questionnaire may mean an issue that is personally sensitive. Respondents may not wish to face any interviewer and would like to complete the survey alone. In order to obtain sensitive information (e.g., perceived body weight, self-esteem), to offer perceived respondent anonymity (respondents' perceptions that their identities will not

be discerned by the interviewer or the researcher), and to avoid social desirability (to give answers that respondents feel to be acceptable in front of others), data were collected using an online self-administered questionnaire sent to a convenience sample of Chilean adults. The final sample size was 283 adults (response rate = 23.2%). The characteristics of the sample are detailed in Table 1. Participants were randomly assigned to one of two conditions (fear or hope advertisement). Subjects were told to watch a video (fear or hope advertisement) for about two minutes. Then, they had to complete an online questionnaire.

3.2. Stimuli

Fear and hope advertisements had the same modality (audiovisual) and similar length (102 and 113 seconds respectively). The fear advertisement is an edited version of a video released by the Children's Healthcare of Atlanta. The video rewinds through Jim's life, to expose a pattern of unhealthy eating and a sedentary lifestyle, leading to him being taken to hospital after suffering a heart attack at the age of 32. The video shows Jim at various phases in his life eating unhealthy foods and sitting around watching television or playing computer games. In the edited version, sentences were modified in order to communicate that adults should change their habits to improve their own health.

The hope advertisement is an edited version of a video released by Coke. The video shows that they published advertisements in a newspaper to promote weight loss pills (magic pills). Without mentioning the brand, the advertisement said the first individuals to call would win a free sample of magic pills. From all the calls, three individuals were chosen to receive the magic pills. But they weren't expecting so many obstacles on their way there like staircases, barking dogs, damsels in distress and grannies with packages to carry. In the end, it turns out that all that was a well-staged, thought-provoking and motivating prank, which is trying to support people that need to lose weight by showing them that just a little bit of effort and activity in their routine does much more for their weight and fitness than a promising magic pill. The video was shortened by removing some obstacles. Also, the mention to Coke was removed from the video to avoid brand effects. In the edited version, sentences were modified in order to communicate that adults should change their habits to improve their own health. Both original videos have not been exhibited in Chile.

3.3. Measures

Subjects were asked complete the questionnaire based upon the scenario (fear or hope advertisement). The appendix contains the measures included in the questionnaire. The dependent variables were healthy eating intention (Chan et al., 2016) and physical activity intention (Hopman-Rock et al., 2005).

The manipulation check was advertising message (fear vs. hope) (Krishen and Bui, 2015). Respondents rated the advertisement message on a bipolar anchored scale with 'fear about changes in your weight for the future' and 'hope for changes in your weight for the future' as endpoints responding to the statement: 'The advertisement message referenced what you would…' 7-point scale (-3 to +3), higher numbers indicate the hope advertisement message while lower numbers indicate the fear advertisement message.

The independent variables were subjective norm - food (Conner et al., 2002), subjective norm - exercise (Courneya, 1995), social influences regarding physical activity (Hopman-Rock et al., 2005), self-efficacy (Hopman-Rock et al., 2005), number of perceived barriers to healthy lifestyle (Hopman-Rock et al., 2005), past behavior - exercise (Abraham and Sheeran, 2004), past behavior - food (Chan et al., 2016), frequency of fast-food consumption (Dunn et al., 2011), self-esteem (Robins et al., 2001), and self-control (Daly et al., 2015). Finally, participants self-reported gender, age, marital status, height, weight, and perceived body weight (underweight, average weight, and overweight). The height and weight data were used to calculate the body mass index (BMI).

<< Table 1 here >>

4. Results

The data (mean scores) was employed in a series of hierarchical regression analyses to estimate the path coefficients for the hypothesized relationships. The independent variables employed in the study were mean-centered before creating the interaction terms to minimize multicollinearity. The results of the hypotheses tests are shown in Tables 2 and 3. To begin, the variance inflation factors (VIFs) for each regression coefficient range from a low of 1.012 to a high of 3.731, suggesting that the variance inflation factors in each regression are at acceptable levels. Thus, this result implies that no multicollinearity existed among the constructs that were used. The Durbin-Watson check for the independence of error terms is not significant in the regression models. Additionally, this study executed the Levene test for homoscedasticity for the dependent variable's uniform variance across values for each variable. The results were not significant ($p > .10$).

4.1. Manipulation check for advertising message

An ANOVA was performed to ensure that the manipulation of the advertisement message was successful. As expected, there was a significant difference ($F (1,281) = 23.641$, $p < .01$) between the hope ($M = .62$) and the fear conditions ($M = -.90$) with means in the appropriate direction.

4.2. Regressions predicting healthy eating intention

As Table 2 summarizes, the Model 1 regression analysis results indicate that individual characteristics explain 43.7% of the variance in healthy eating intention. Adding the fear versus hope appeals in health advertisements in Model 2 increased the R^2 value to 44.5% ($\Delta F = 3.997$, $p < .05$). The results suggest that fear versus hope appeals in health advertisements have a more positive effect on healthy eating intention ($\beta = .083$, $p < .05$). That is, when subjects view a fear advertisement, they will be more like to report greater healthy eating intention than when they view a hope advertisement. Therefore, H1a is supported.

Adding the interaction terms in Model 3, using stepwise regression (15 interactions terms; fear advertisement x 15 individual characteristics), increased the R^2 value to 47.2% ($\Delta F = 6.807$, $p < .01$). The results suggest that the effect of fear advertisements on healthy eating intention is positively moderated by frequency of fast-food consumption ($\beta = .083$, $p < .05$). Therefore H2a is supported.

The results also suggest that the effect of fear advertisements on healthy eating intention is negatively moderated by self-efficacy ($\beta = -.123$, $p < .01$). Therefore, H7a is supported.

The results suggest that the effect of fear advertisements on healthy eating intention is not moderated by perceived body overweight, past behavior, subjective norm, social influences, self-esteem and self-control. Therefore, H3a, H4a, H5a, H6a, H8a and H9a are not supported.

<< Table 2 here >>

4.3. Regressions predicting physical activity intention

As Table 3 summarizes, the Model 1 regression analysis results indicate that individual characteristics explain 29.2% of the variance in physical activity intention. Adding the fear versus hope appeals in health advertisements in Model 2 increased the R^2 value by only 0.3% ($\Delta F = 1.175$, $p > .10$). The results suggest that fear versus hope appeals in health advertisements have no effect on physical activity intention ($p > .10$). Therefore, H1b is not supported.

Adding the interaction terms in Model 3, using stepwise regression (15 interactions terms; fear advertisement x 15 individual characteristics), increased the R^2 value to 35.7% ($\Delta F = 6.381$, $p < .01$). The results suggest that the effect of fear advertisements on physical activity intention is positively moderated by perceived body overweight ($\beta = .107$, $p < .05$) and past behavior – food ($\beta = .122$, $p < .01$). Therefore, H3b and H4b are supported.

The results also suggest that the effect of fear advertisements on physical activity intention is negatively moderated by subjective norm – food (β = -.154, p < .01) and subjective norm - exercise (β = -.187, p < .01). Therefore, H5b is supported.

The results suggest that the effect of fear advertisements on physical activity intention is not moderated by frequency of fast-food consumption, social influences, self-efficacy, self-esteem and self-control. Therefore, H2b, H6b, H7b, H8b and H9b are not supported.

<< Table 3 here >>

5. Discussion

The results of this study suggest that in Chile fear versus hope appeals in health advertisements have a more positive effect on healthy eating intention. That is, when subjects view a fear advertisement, they will be more like to report greater healthy eating intention than when they view a hope advertisement. This study also aims to find out in which situations related to different individual characteristics, fear advertising works as a powerful tool in generating healthy eating intention and physical activity intention. The results suggest that the effect of fear advertisements on healthy eating intention is positively moderated by frequency of fast-food consumption and is negatively moderated by self-efficacy. The results suggest that fear versus hope appeals in health advertisements have no effect on physical activity intention. However, the results suggest that the effect of fear advertisements on physical activity intention is positively moderated by perceived body overweight and past behavior – food and is negatively moderated by subjective norm – food and subjective norm – exercise.

The results suggest that when making health advertising, homogenous messages are not persuasive for heterogeneous audiences. Based on the results of this study, it would be better to call for fear in the situations where the audience is expected to be high fast-food consumption and perceived body overweight. Hope advertising would be more effective in situations where the audience is expected to be high in subjective norm and/or self-efficacy.

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Table 1. Descriptive statistics

	Mean	Standard deviation	Minimum	Maximum
Dependent variables				
Healthy eating intention	4.00	.88	1.00	5.00
Physical activity intention	3.25	.79	1.00	4.00
Individual characteristics				
Frequency of fast-food consumption	2.70	1.65	.00	8.00
Perceived body overweight	.36	.48	.00	1.00
Past behavior – food	3.61	1.02	1.00	5.00
Past behavior – exercise	4.14	3.22	.00	14.00
Subjective norm – food	5.22	1.69	1.00	7.00
Subjective norm – exercise	5.32	1.43	1.00	7.00
Social influences regarding physical activity	.67	.53	-1.00	1.00
Self-efficacy	7.67	2.19	.00	10.00
Self-esteem	6.33	1.74	1.00	9.00
Self-control	4.71	1.46	1.00	7.00
Number of perceived barriers to healthy lifestyle	.97	.81	.00	5.00
Female	.48	.50	.00	1.00
Age	2.44	2.40	1.00	10.00
Married	.29	.45	.00	1.00
Body mass index	23.83	3.33	15.78	33.84
Advertisement and manipulation checks				
Fear versus hope appeals in health advertisements	.53	.50	.00	1.00
Advertising message (fear vs. hope)	-.18	2.72	-3.00	3.00

Table 2. Regressions predicting healthy eating intention

	Hypothesis	Model 1	Model 2	Model 3
Intercept		4.000**	4.000**	4.002**
Individual characteristics (method = enter)				
Frequency of fast-food consumption		-.043	-.035	-.031
Perceived body overweight		.028	.014	.058
Past behavior – food		.349**	.353**	.337**
Past behavior – exercise		.100*	.102*	.121*
Subjective norm – food		.053	.053	.077
Subjective norm – exercise		.089	.084	.068
Social influences regarding physical activity		.004	.008	.010
Self-efficacy		.192**	.191**	.177**
Self-esteem		-.092	-.087	-.089
Self-control		.028	.024	.025
Number of perceived barriers to healthy lifestyle		-.089	-.101*	-.109*
Female		.166**	.173**	.169**
Age		.033	.041	.049
Married		.084	.078	.068
Body mass index		-.003	.007	-.042
Advertisement (method = enter)				
Fear versus hope appeals in health advertisements	H1a: +		.083*	.083*
Interaction effects (method = stepwise)				
Fear x Frequency of fast-food consumption	H2a: +			.083*
Fear x Self-efficacy	H7a: -			-.123**
Maximum VIF value		3.596	3.613	3.731
R²		.437	.445	.472
Adjusted R²		.405	.411	.436
R² change		.437	.008	.027
Partial F value		13.790**	3.997*	6.807**
N		283	283	283

Table 3. Regressions predicting physical activity intention

	Hypothesis	Model 1	Model 2	Model 3
Intercept		3.254**	3.254**	3.257**
Individual characteristics (method = enter)				
Frequency of fast-food consumption		-.008	-.004	.011
Perceived body overweight		.047	.040	.034
Past behavior – food		.016	.018	.048
Past behavior – exercise		.068	.069	.050
Subjective norm – food		.065	.065	.032
Subjective norm – exercise		.061	.058	.057
Social influences regarding physical activity		.079	.081	.082
Self-efficacy		.310**	.309**	.297**
Self-esteem		-.021	-.018	-.006
Self-control		.026	.023	.026
Number of perceived barriers to healthy lifestyle		-.017	-.024	-.045
Female		.044	.048	.061
Age		-.143**	-.139**	-.128*
Married		.018	.015	.013
Body mass index		-.029	-.023	-.006
Advertisement (method = enter)				
Fear versus hope appeals in health advertisements	H1b: +		.045	.050
Interaction effects (method = stepwise)				
Fear x Perceived body overweight	H3b: +			.107*
Fear x Past behavior – food	H4b: +			.122**
Fear x Subjective norm – food	H5b: -			-.154**
Fear x Subjective norm – exercise	H5b: -			-.187**
Maximum VIF value		3.596	3.613	3.662
R^2		.292	.295	.357
Adjusted R^2		.252	.252	.308
R^2 change		.292	.003	.063
Partial F value		7.331**	1.175	6.381**
N		283	283	283

Appendix. Questionnaire (in order of appearance)

Healthy eating intention (Chan et al., 2016; Cronbach's alpha = .80)

Do you intend to engage in healthy eating over the next week?

How likely is it that you will engage in healthy eating over the next week?

(5-point scale, 1 = definitely no, 5 = definitely yes)

Physical activity intention (Hopman-Rock et al., 2005)

Do you plan to be more physically active in the short term? The answer categories were

1 = no, absolutely not, to 4 = yes, definitely.

Advertising message (fear vs. hope) (adapted from Krishen and Bui, 2015)

Respondents rated the advertisement message on a bipolar anchored scale with 'fear about changes in your weight for the future' and 'hope for changes in your weight for the future' as endpoints responding to the statement: 'The advertisement message referenced what you would…' 7-point scale (-3 to +3), higher numbers indicate the hope advertisement message while lower numbers indicate the fear advertisement message.

Subjective norm - food (Conner et al., 2002)

People who are important to me think I should eat a healthy diet (unlikely–likely; scored 1 to 7)

Subjective norm - exercise (Courneya, 1995)

Most people who are important to me think I should engage in regular physical activity (7-point Likert scale, 1 = strongly disagree, 7 = strongly agree)

Social influences regarding physical activity (Hopman-Rock et al., 2005)

How do you think people in your environment will react if you exercise more? Answer categories were: positive +1, neutral 0, negative - 1.

Self-efficacy (Hopman-Rock et al., 2005)

Do you think you will be able to be more physically active? The answer categories ranged from 0 = I am sure I cannot to 10 = I am sure I can.

Number of perceived barriers to healthy lifestyle (adapted from Hopman-Rock et al., 2005)

A number of questions looked at several potential barriers: no time, no interest, not used to, too expensive, no progress, feeling unhealthy, other problems. Answer categories were 1 = agree and 0 = disagree. Sum score for 7 questions.

Past behavior - exercise (Abraham and Sheeran, 2004)

How many days did you exercise in the last two weeks?

Past behavior - food (Chan et al., 2016)

How often did you engage in healthy eating in the past month? (5-point scale, 1 = never, 5 = very often).

Frequency of fast-food consumption (Dunn et al., 2011)

Participants were asked to report the frequency of fast-food consumption on a scale including responses: 0 = never, 1 = occasionally, 2 = once a month, 3 = once a fortnight, 4 = once a week, 5 = 2-3 times a week, 6 = 4-6 times a week, 7 = once a day, and 8 = more than once a day.

Self-esteem (Robins et al., 2001)

I have high self-esteem (9-point Likert scale, 1 = strongly disagree, 9 = strongly agree)

Self-control (Daly et al., 2015)

Self-control was measured using a single item where participants rated their level of self-control on a scale from 1 (little self-control) to 7 (disciplined).

Finally, participants self-reported gender, age (18-25, 26-30, 31-35, 36-40, 41-45, 46-50, 51-55, 56-60, 61-65, +65), marital status, height, weight, and perceived body weight (underweight, average weight, and overweight). The height and weight data were used to calculate the body mass index (BMI).