

Studying the “Choose to Live Healthy” Campaign Messages Under the Theory of Planned Behavior in Chilean Schools

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Considering student obesity problem, this study investigated Chilean teachers' behavioral intentions to include two anti-obesity health messages into their classroom teaching activities, which belonged to the “Choose to Live Healthy” campaign. Using the traditional model of the Theory of Planned Behavior (TPB; Ajzen, 1985), three research questions were answered: (a) Which of the two messages from the “Choose to Live Healthy” Campaign are known by Chilean schools' teachers? (b) According to the level of knowledge of each message declared by teachers, how do the TPB model and its subcomponents explain teachers' intentions variability to include an anti-obesity message based on the campaign studied in their teaching activities? and (c) Based on the knowledge declared by teachers of the campaign messages, do the TPB model's subcomponents explain the variability on teachers' intentions to include the anti-obesity content of the campaign message in their teaching activities by types of schools? A total of 245 Chilean teachers were surveyed across three different types of schools. Results from regression analysis confirmed that five of the TPB subcomponents made a fundamental contribution to examine the variability of the theoretical framework upon teachers' behavioral intentions, with the exemption of perceived behavioral control autonomy. This study confirmed the great relevance and effectiveness of the TPB model to contribute to the interpretation of behavioral intentions variability across different types of contexts. Implications for health campaigns are mentioned.

Keywords: health communication, theory of planned behavior, Choose to Live Healthy, schools

Introduction

The rise of childhood obesity corresponds to a significant epidemic, which affects public health across nations worldwide. Regarding developing countries from the Global South, Chile is not an exception. According to the Organization for Economic Co-operation and Development (OECD, 2019), one out of three Chilean adults are obese, and 44.5% of children are obese or overweight.

Several national healthy lifestyle programs and campaigns have been implemented to address obesity in Chile with unsuccessful results (Ministerio de Salud de Chile, 2013). Despite these failed outcomes, schools have been valued as key environments against the struggle of overweight and obesity (Bustos, Olivares, Leyton, Cano, & Albala, 2016). In this sense, Bustos and colleagues (2016) declared that “most research has been based on diverse strategies, covering one or more important components (...) and has not been able to show convincing results regarding the effectiveness of school-based programs in reducing overweight and obesity” (p. 2). In

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addition, researchers agree that “a lack of evidence of the effectiveness of interventions to date has led to question the wisdom of allocating resources to programmes” (Bustos et al., 2016, p. 9). As an answer to overcome the actual obesity trend, disciplines and multisector perspectives are required to provide an integrative view of the obesity trend in Chile.

To advance in a possible solution to the obesity puzzle, social marketing constitutes a novel perspective in Chile. Among its theoretical frameworks, previous research has demonstrated that the Theory of Planned Behavior (TPB; Ajzen, 1985) has been considered a well-developed approach to address individual behavioral phenomena, such as obesity. In particular, the TPB has studied a large proportion of individual behavioral variances and behaviors coming from the social psychology field. Evidence comes from several studies and meta-analysis written by scholars in the field (Armitage & Conner, 2001; Albarracin, Johnson, Fishbein, & Muellerleile, 2001; Albarracin, Kumkale, & Johnson, 2004; Albarracin et al., 2005; Webb & Sheeran, 2006).

This research explores the knowledge that school teachers have upon two messages of a campaign under the Theory of Planned Behavior framework. Specifically, it examines school teachers’ behavioral intentions to include a non-mandatory health campaign message from the “Choose to Live Healthy” national initiative into their teaching activities. The influence of this message is analyzed across three different types of schools in Chile, involving public and private organizations.

Based on the purposes of this paper, this work is organized as follows: first, it briefly examined the current obesity scenario in Chile, the Chilean educational system, some of the most recent and up-to-date Chilean efforts to overcome obesity, social marketing and multisector research collaborations, teachers as a target of this study, and the TPB model. Second, research questions are posed. Third, methods are presented specifically connected to the health messages studied from the “Choose to Live Healthy” campaign. Fourth, findings are presented. Finally, discussion and conclusion sections are included considering research questions connected to the TPB framework and the health campaign studied.

Literature Review

Current Scenario in Chile

As many countries in the world, Chile has an obese population (Ministerio de Salud de Chile, Pontificia Universidad Catolica de Chile, & Universidad Alberto Hurtado, 2009-2010). The study “Global School-Based Student Health Survey” (CDC, 2005) in Chile revealed that 85% of boys and 93% of girls aged 13 to 15 years old were sedentary, engaging in less than an hour of physical activity per day. Later on, the Chilean National Survey (Ministerio de Salud de Chile et al., 2009-2010) demonstrated that overweight and obesity reached almost 64.4% in men and 64.3% in women. In the case of children between 6 to 18 years old, overweight and obesity prevalence was estimated at 45.5%.

Today, this trend has not yet decreased. As one of the most recent studies from the OECD (2019), *Reviews of Public Health* revealed that: “In 2016, 39.8% of the Chilean population was overweight, and another 34.4% was obese. (...) The National Health Survey shows that there has been no reduction in the prevalence of overweight and obesity in the last 15 years” (p. 12). Regarding childhood, the same OECD (2019) study considers that:

[t]he rate of childhood overweight and obesity in Chile is nearly 45%, which is considerably higher than the OECD average of around 25%. This is a significant public health issue in itself, but also poses risks for the future. Children who are

overweight are more likely to be overweight as adults, and are at greater risk of poor health in the future. Chile's high prevalence of childhood overweight and obesity can be considered a “health time-bomb”. (OECD, 2019, p. 12).

In front of these alarming figures, the OECD (2019) *Reviews of Public Health* visualizes “inequities in obesity distribution across population groups. A large number of determinants influence lifestyle, including housing, education, gender, the environment, income and age, and these factors are causing differences in obesity rates” (p. 12). Therefore, national schools constitute key organizations to maximize efforts against obesity rates. Chile has done several efforts linked to its school system. In the next section, the Chilean educational system is presented.

Chilean Educational System

Today, the Chilean educational system is composed of a different school choice. Based on a voucher funding system, as scholars (Contreras, 2001; Mizala & Torche, 2012) explain, three main distinctive types of schools rule in Chile: (a) Municipal schools (traditional public schools) financed by the Chilean State, and run by a municipality directed by a mayor; (b) Private state-subsidized schools, with mixed nature as they are owned by private resources; although the organization accepts public subsidy and conditions as municipal schools do; and (c) Tuition schools, corresponding to completely fee paying schools by families or the private sector.

A distinctive situation among Chilean schools is teachers' freedom to choose, adopt, or implement any type of message in their classrooms. However, it is necessary to acknowledge that according to the Chilean Ministry of Education, teachers must follow the “Framework of Good Teaching”, which contains the guidelines for teachers' class preparation, environment for an adequate learning process, and the purpose of all students' learning and teachers' professional responsibilities (Ministerio de Educación de Chile, 2008). Thus, teachers have the option to introduce or share health messages among their classrooms duties across all Chilean school types.

Efforts Achieved in Chile

For several decades, Chile has fought against childhood obesity pandemic. In spite of several national healthy lifestyle programs and campaigns implemented, obesity rates have not decreased (OECD, 2019). During these last years, Chile has mainly combined three fundamental strategies: (a) a large variety of programs at schools, (b) mass media public campaigns, and (c) the introduction of new anti-obesity policies. Although obesity is a public health illness whose results may show in the long term, the three components mentioned can still be part of a more integrative strategy that considers individuals' behavioral intentions to reduce obesity rates.

Chilean schools. The Chilean literature reports many well-intended experiments that have been tested in isolation. Among the most recent endeavors, Vinueza and colleagues (2016) evaluated a nutritional intervention through a school-based food garden with positive results. Nevertheless, it was only carried out for a short period of time, which was not enough to show changes in students' food consumption (Vinueza et al., 2016). Second, Mardones and scholars (2017) explored teachers' training to deliver physical activity in the classroom only in one school. Notwithstanding, results were measured mainly through physical indicators such as height, blood pressure, waist circumference; meanwhile teachers' impressions were only collected through a focus group activity (Mardones et al., 2017). Third, a late study on school children physical activity by scholars Delgado-Floody and researchers (2018) combined psychosocial, physical, and anthropometric variables. The only psychosocial variables considered in their study were self-esteem and dissatisfaction with body image (Delgado-

Floody et al., 2018). Finally, another set of research tackles technologies and communication devices, although they require being part of a larger plan of actions against obesity rates. For instance, Badilla, Johnson Glenberg, Galindo Ledezma, Revuelta Dom ínguez, and Pedrera Rodr íguez (2017) proposed the promotion of nutrition through the use of videogames devices to support science education curriculum in Chile. Their results revealed positive findings as children’s knowledge retention was higher suggesting that “the narrative may have instructed in and helped to consolidate content memory” (Badilla et al., 2017, p. 1) regarding nutrition in Chilean students.

Mass media public campaigns. Over the years, Chile has launched a series of national mass media campaigns aimed to reduce obesity rates. Since 1998, the Ministry of Health began the advancement of this area, launching its National Health Promotion Program (Zamora Vald é s, 2015). After several campaigns, it was only until 2011, under the first Government of Sebasti á n Pi ñera, that the “Choose to Live Healthy Campaign” was presented. At that moment, it consisted in a public health campaign, guided by the Chilean First Lady, Cecilia Morel, inspired in the North American “Let’s Move Campaign” initiative under Michelle Obama’s work (Cooperativa, 2011).

In 2011, the “Choose to Live Healthy Campaign” corresponded to an initiative from the Government of Chile to promote healthy lifestyles among the Chilean population. At that moment, it was in line with the Law Number #20.670, the campaign aimed “to promote habits and healthy lifestyles to improve the quality of life and welfare of the people” (National Congress of Chile Library, 2013).

The campaign was launched at a major level, promoting websites, television, and radio advertising, and educational materials were provided at schools. After the campaign reached the awareness of the Chilean population, it was established as a Law, creating the “System Choose Healthy Living” (National Congress of Chile Library, 2013). This last one was a management model constituted by “policies, plans and programs that aim to educate, inform and promote the prevention of risk factors and behaviors associated with noncommunicable diseases derived from unhealthy lifestyles” (Zamora Vald é s, 2015, p. 12).

Legal policies. During these last years, Chile has just begun to include new public policy and governmental regulations connected to obesity rates. Initially, in 2014, a sugar-sweetened beverage tax was, for the first time, implemented in the country (Guerrero-L ópez, Unar-Mungu á, & Colchero, 2017). As Bl üher (2019) stated, it “was associated with a substantially reduced purchase of sugary soft drinks, but health effects including obesity reducing obesity cannot yet be evaluated” (p. 296). Later on, only in 2016, the country introduced front-of-package labels on packed foods, which inform citizens which food are high in calories, salt, sugar, or fat. According to the OECD (2019) *Reviews of Public Health*,

it is clear that the policy has already had an impact. An evaluation by the Ministry of Health found that 44% of consumers used the labels to compare products, and 92% of them were encouraged to buy less or to buy different products. (OECD, 2019, p. 13)

Therefore, evaluations have shown that this initiative has been successful. However, interconnected strategies are still required to solve this multisector puzzle to fight against Chilean obesity.

Social Marketing and Multisector Research Collaborations

From a social marketing perspective, planned social change requires the use of social psychology theories in order to illuminate social actions. In this sense, a lack of theoretical guidelines upon social, health, and educational interventions constitutes a weakness that requires overcoming. As Brown et al.’s (2016) work

recognized, one of the most common mistakes is that “researchers (...) used strategies based on behavior change theories but failed to report the theoretical framework” (p. 12). In this sense, after conducting a systematic review of childhood obesity interventions, Brown et al. (2016) found that the most popular theoretical framework used was Social Cognitive Theory (SCT) for school interventions from 1999 to 2004. Although SCT is a well-known theory in social marketing, its appropriateness does not fit all types of social intervention problems. In this sense, the social marketing field has proved to contain an ample toolbox which effectively requires to be tested upon a variety of social and cultural realities where several theories may mix and match.

In addition to theoretical models, efficacious interventions for behavioral change require multisector research collaborations. As Kline and colleagues (2017) expose, “behavior change strategies, in particular, should be planned in combination with environment and policy change, because the multi-level interventions are most likely to be effective” (p. 23). Although health interventions are mainly considered from a medical perspective—by doctors, nutritionists, and similar professions—scholars have begun to value novel partnerships and collaborations efforts. After investigating the prevention of childhood obesity in Latin America, Caballero, Vorkoper, Anand, and Rivera (2017) recognized that successful attempts consider “encouraging multisector teams and expanding them to include disciplines such as communications, economics and policy analysis will be essential” (p. 4). Therefore, multisector endeavors demand not only addressing obesity rates through medical and new policies perspectives. It also requires the inclusion of health communication expertise through social marketing, starting from new opportunities to identify research needs until the translation of programs that tackle directly people’s beliefs and actions.

Targeting Teachers

Teachers’ role is directly connected to the promotion of healthy eating behaviors in schools and is a fundamental piece of the anti-obesity puzzle. The main lack of success is that almost all obesity studies in Chilean schools have not mostly targeted specifically teachers (Vio, Albala, & Kain, 2008; Kain, Concha, Salazar, Leyton, Rodríguez, Ceballos, & Vio del Río, 2009) as a vital actor in the educational system, although some initial attempts have been initiated. For instance, Fierro, Salinas, Lera, Gonzalez, and Vio del Río (2019) studied the effects of a program for teachers to change eating habits and culinary skills in public schools in Chile. Specifically, scholars trained teachers on the appropriate consumption of water and fruits, and taught them how to prepare healthy sandwiches (Fierro et al., 2019). As a result, healthy food training improved food habits in teachers and students (Fierro et al., 2019). However, the measurement instruments of this particular experience only focused on consumption, habits and eating practices, nutritional status, and school action plans (Fierro et al., 2019), not considering teachers’ internal beliefs and behavioral intentions of future actions or behaviors in the long term.

A recent second example in Chile was the work conducted by Vio del Río, Yáñez, González, Fretes, and Salinas (2018). Researchers explored teachers’ self-perceptions of their own dietary behavior and needs to teach healthy eating habits in Chilean schools (Vio del Río et al., 2018). The information was gathered using the focus groups technique for a qualitative study, which considered teachers’ own eating habits, barriers to healthy eating, teachers’ culinary habits, and information and communication technologies (ICT) and participative actions (Vio del Río et al., 2018). The research concluded that teachers needed a “program with Information and Communication technologies and cooking workshops to apply in the classroom” (Vio del Río et al., 2018, p. 1019). In this sense, Chilean obesity solution requires more multisector research collaborations today. Not only

national policies are declared, but also combination with health promotion is required. Individuals' beliefs and behavioral intentions also need to be considered, as well as health communication through social marketing.

In addition, one of the most recent implementations of the new regulation was studied by Correa and colleagues (2019). The authors explored knowledge, perceptions, and behaviors of mothers of young children, noticing important advances in the fight of childhood obesity (Correa et al., 2019). Through the focus groups technique, the study evaluated the mandatory use of front-of-package warning labels on packaged food/beverages high in energy, sugars, saturated fats, and sodium by mothers, instead of teachers (Correa et al., 2019). It was obtained that mothers indicated “changing their purchase habits only when buying new products” (Correa et al., 2019, p. 16). Nevertheless, mothers recognized that the role of schools as “key promoters of food behavioral change” was in the right direction (Correa et al., 2019, p. 16).

In Chile, no studies have yet explored teachers' behavioral intentions to only include two communicational messages, combining health communication and social marketing perspectives, among their own teaching activities in their classrooms. Thus, as a possible solution, this study constitutes a particular effort to examine teachers' behavioral intentions on health messages using a theoretical framework that has not been previously used in Chile to address this problem: the Theory of Planned Behavior model.

Theory of Planned Behavior

Over nearly 30 years, the Theory of Planned Behavior (TPB) has been established as a robust explanation of individual decision making. Its framework focuses on explaining and understanding individual behavior of people in different situations and contexts (Ajzen, 1985; Fishbein & Ajzen, 2010). Although TPB is a relatively recent theory, many studies have successfully employed it. Examples of effective and diverse health interventions using the TPB include smoking behaviors (Godin, Valois, Lepage, & Desharnais, 1992), binge drinking (Johnston & White, 2003), breast cancer (Norman & Hoyle, 2004), skin cancer (Pertl, Hevey, Thomas, Craig, N íChuinneag áin, & Maher, 2010), bicycle use for transportation and snacking behavior (De Bruijn, Kremers, Schaalma, Van Mechelen, & Brug, 2005), e-coupons usage (Kang, Hahn, Fortin, Hyun, & Eom, 2006), hormone replacement (Legare et al., 2003), intention to wear seat belts (Trafimow & Fishbein, 1994), and many others. In particular, the TPB has also been specifically tailored with healthy choices for exercise (Blue, 1995; Araujo-Soares, McIntyre, MacLennan, & Sniehotta, 2009), obesity and diabetes type 2 (Muzaffar, Chapman-Novakofski, Castelli, & Scherer, 2014), food choices (Armitage & Conner, 1999), and even genetically modified food (Silk, Weiner, & Parrott, 2005). Thus, it is appropriate to use TPB to model teachers' intentions to promote obesity messages in classrooms.

This theory is composed of four main components (Fishbein & Ajzen, 2010), corresponding to:

(1) Attitudes (ATTs), defined as “a latent disposition or tendency to respond with some degree of favorableness or unfavorableness to a psychological object” (Fishbein & Ajzen, 2010, p. 76). For the purpose of this study, ATTs will be classified as instrumental for cognitive factors (e.g., beneficial/harmful) and experiential for affective components (e.g., enjoyable/unenjoyable) (Rhodes & Courneya, 2003).

(2) Subjective Norms (SNs), conceived as “an individual's perception that most people who are important to her [him] think she [he] should (or should not) perform a particular behavior” (Fishbein & Ajzen, 2010, p. 131). Later on, the TPB model, based on the ideas of Cialdini, Reno, and Kallgren (1990), considered two types of norms: (a) Injunctive Norms (INs), which corresponded to what others morally approve and disapprove or what is ought to be done; and (b) Descriptive Norms (DNs), referred to what others do or is done. In the case of this study, the use of these both types of norms will be applied.

(3) Perceived Behavioral Control (PBC), which is conceived as “the extent to which people believe that they are capable of performing a given behavior, that they have control over its performance” (Fishbein & Ajzen, 2010, p. 154). PBC considers availability of information, skills, opportunities, and other resources required to perform the behavior in question (capacity), as well as barriers and obstacles that may exist (autonomy). Moreover, autonomy and capacity correspond to sub-elements from the hierarchical construct of PBC.

(4) Behavioral Intentions (BIs), conceived as “indications of a person’s readiness to perform a behavior” (Fishbein & Ajzen, 2010, p. 39).

Several findings supported the arguments that each of the TPB constructs vary as a strong predictor according to contexts and behaviors (Fishbein & Ajzen, 2010). However, results of meta-analysis have revealed that social norms appeared as the weakest predictor of the TPB model (Armitage & Conner, 2001). Others researchers (Mahoubg éHounsa, Godin, Alihonou, Valois, & Girard, 1993) have emphasized the importance of SNs, and how explained variance can change from subjective norms according to the behavior under study, cultural ingredients, or situational variables affecting a particular behavior. Specifically, three previous studies have applied the TPB framework in Chile: (a) A first research executed by Lagos, C. Montero, and P. Montero (2014) examined students’ behavioral intentions on mathematical learning; (b) A second study performed by Montero (2016), studied the institutionalization processes of anti-obesity messages in Chilean schools finding differences across school types; and (c) A third work conducted by Galleguillos, Escobar, and Hurtado (2019) confirmed the strengths of the TPB framework and its components to study undergraduate students’ entrepreneurial behavioral intentions. Therefore, some initial studies using the TPB model have begun to emerge in the country; however, multiple opportunities for deepening into this model still remain open.

Research Questions

Three research questions were pondered upon through this study:

RQ1: Which of the two messages from the “Choose to Live Healthy” Campaign are known by Chilean schools’ teachers?

RQ2: According to the level of knowledge declared by teachers of each message, how do the TPB model and its subcomponents explain teachers’ intentions variability to include an anti-obesity message based on the campaign studied in their teaching activities?

RQ3: Based on the knowledge declared by teachers of the campaign messages, do the TPB model’s subcomponents explain the variability on teachers’ intentions to include the anti-obesity content of the campaign message in their teaching activities by types of schools?

Method

Participants

A total of 10 schools participated in this study. Schools were chosen based on a convenience sample of units. A total of 245 teachers were surveyed, 32% ($n = 78$) of whom were from municipal schools, 29% ($n = 71$) were from private state-subsidized schools, and 39% ($n = 96$) were from tuition schools. Participants’ responding was 55% ($n = 133$) female, with an average age of 42 years (minimum of 24 years old and a maximum of 66 years old). Of the 245 teachers, 49% ($n = 111$) held a bachelor’s degree and 36% ($n = 81$) held a master’s degree.

Study Design

This study is a quasi-experimental design occurring in a natural setting. This research is a one-shot study

design where participants were selected for observation over a single and limited time. This study design includes school types, and teachers of each type of school. The sample of this study is purposive. In other words, schools will not be randomly selected.

Specifically, the knowledge of teachers upon two messages of the campaign “Choose to Live Healthy” will be studied related to teachers’ behavioral intention to include content of these messages in their teaching activities. This variable will be measured using self-reported methods—in this study, that corresponds to a survey, based on the guidelines of Fishbein and Ajzen (2010) with school teachers. According to the theory explained before, the intention of behavior is a strong predictor of behavior that will correspond to the reach of this study. The messages examined are the following:

Message 1: People are recommended to “prefer foods with lower saturated fat content, reduce habitual consumption of sugar and salt, and drink six to eight glasses of water a day”.

Message 2: People are recommended to “eat three daily servings of dairy products, three servings of fruits and two servings of vegetables every day, eat meat or beans, at least twice a week, and eat steamed or baked fish twice a week”.

Study Variables

Independent variable. Teachers’ attributes composed by each of the components and subcomponents belonging to the TPB framework: (a) Experiential and Instrumental Attitudes, (b) Injunctive and Descriptive Subjective Norms, and (c) Autonomy and Capacity Perceived Behavioral Control.

Dependent variable. Teachers’ intention to include anti-obesity messages in their teaching activities is the dependent variable. Specifically, their willingness to include these types of messages in the specific teaching activities was measured.

Procedure

IRB and schools authorization. Previously to any pilot experiment, informed consent forms were approved by the Institutional Review Board of the University of Illinois at Urbana-Champaign (UIUC), in 2015. In addition, each school signed a consent agreement form which authorized teachers to participate in this study.

Pilot study. Prior to data collection, a pilot experiment was conducted before the actual study to validate measurements processes and instruments. In light of the outcomes, minor changes were executed regarding translation issues. The original items were designed in English; however, they were translated into Spanish for application processes. Translations were in charge of a native Chilean Spanish speaker. Also, pilot testing was employed based on Fishbein and Ajzen (2010) methodology for this theory. As a result, a self-reported questionnaire described below was created.

Questionnaire Design and Measures

The questionnaire had two sections. In the first section, sociodemographic characteristics were considered: type of school in which teachers worked (i.e., municipal; private state-subsidized; tuition); gender (i.e., male, female); and last academic degree obtained (i.e., university studied not completed, bachelors’ degree, masters’ degree, no degree obtained). In addition, in this same section, participants were also asked for the two messages studied regarding the Campaign “Choose to Live Healthy” (e.g., Message 1: “Prefer foods with lower saturated fat content, reduce habitual consumption of sugar and salt, and drink six to eight glasses of water a day”). For each item, respondents were asked to answer only one of the following options for each message: “I do not know any of these messages,” “I only know one of these messages,” or “I know both messages”.

In the second section, the questionnaire had a total of 14 items for the TPB framework, with a Cronbach's $\alpha = 0.90$. It was originally applied in Spanish, and later analyzed in English. The TPB model was measured as follows:

(1) Attitudes. Attitudes were assessed using a total of four items. For instrumental attitudes, two items were asked (e.g., “For me, the ‘Choose to Live Healthy’ Campaign motivates me to include healthy eating messages in my teaching activities for next semester in order to improve healthy eating of my students.”). Respondents answered using a seven-point Likert scale answering from the following options: from inconvenient (1) to convenient (7); and from useless (1) to useful (7). For experiential attitudes, two items were used (e.g., “For me, the ‘Choose to Live Healthy’ Campaign motivates me to include healthy eating messages in my teaching activities for next semester in order to improve healthy eating of my students.”). For each item, respondents answered using the same seven-point Likert scale from boring (1) to interesting (7). For this construct, $M = 5.80$, $SD = 1.16$, and Cronbach's $\alpha = 0.91$.

(2) Subjective Norms. Respondents were asked a total of four items for subjective norms. For subjective norms injunctive, two items were asked (e.g., “Most of the people who are important to me would support me to include healthy eating messages based on the ‘Choose to Live Healthy’ Campaign in my teaching activities for the next semester”). For subjective descriptive norms, two items were included (e.g., “Most of the people whose opinion I value have included in their activities healthy eating messages based on the ‘Choose to Live Healthy’ Campaign which considers healthy eating”). All items were answered using a seven-point Likert scale from totally disagree (1) to totally agree (7). For this construct, $M = 4.94$, $SD = 1.19$, and Cronbach's $\alpha = 0.70$.

(3) Perceived Behavioral Control. Participants answered a total of four items for perceived behavioral control. For perceived behavioral control autonomy, two items were included (e.g., “How much control do you have over the national curriculum if you really want to include messages on healthy eating in your teaching activities for the next semester based on the ‘Choose to Live Healthy’ Campaign that considers healthy eating?”). Respondents answered using the same seven-point Likert scale from completely without control (1) to under total control (7). For perceived behavioral control capacity, two items were considered (e.g., “How sure are you that you can overcome time constraints, if you really want to include healthy eating messages in your teaching activities next semester based on the Campaign ‘Choose to Live Healthy’ that considers healthy eating?”). All items were answered using a seven-point Likert scale from completely sure I cannot (1) to completely sure I can (7). For this construct, $M = 4.70$, $SD = 1.28$, and Cronbach's $\alpha = 0.70$.

(4) Behavioral Intention. This construct was assessed by a total of two items (e.g., “I will try to include healthy eating messages in my teaching activities for the next semester”). All items were answered using a seven-point Likert scale from totally disagree (1) to totally agree (7). For this construct, $M = 5.44$, $SD = 1.44$, and Cronbach's $\alpha = 0.82$.

Results

The IBM Statistical Package for Social Sciences (SPSS), version 22 was utilized to evaluate data. Research questions were answered using descriptive statistics, ANOVA, and Stepwise Lineal Regression Analysis. Results for each research question are presented below.

To answer research question 1, regarding which of the two messages from the “Choose to Live Healthy” Campaign were known by Chilean schools' teachers, descriptive statistics calculations were performed for each message. The results revealed for Message 1 that 77.1% ($N = 189$) knew the message, from a total of 243

participants who answered this question. In the case of Message 2, 62% ($N = 152$) teachers recognized to have knowledge about this message, from the same total of 243 participants who answered this question.

In addition, based on the answers of those teachers who declared to know both messages, correlations were computed. As a result, it was obtained that $r = 0.27$. Thus, the two messages were not significantly correlated with teachers' knowledge about them. Therefore, teachers might know only one of the two messages. This last finding implies that each of the messages was considered differently, although both belonged to the same health campaign.

The second research question studied was that, based on the knowledge of each message declared by the teachers, how the components and subcomponents of the TPB model explain teachers' intentions variability to include an anti-obesity message based on the campaign studied in their teaching activities. First, based on teachers' behavioral intention, descriptive statistics were obtained for: (a) teachers who did not know any of the two messages were 14.7% ($M = 5.47$, $SD = 1.44$, $N = 36$); (b) teachers who only knew one message was 29.8% ($M = 5.33$, $SD = 1.44$, $N = 73$); and (c) teachers who knew both messages were 54.7% ($M = 5.47$, $SD = 1.44$, $N = 134$). In order to compare medias among the three levels of knowledge of the campaign messages studied before in this question, ANOVA calculations were performed. As a result, it was obtained $F = 2.48$, and $p = 0.78$. Therefore, variations were not statistically significant; thus, based on the level of knowledge, behavioral intentions whether to include the campaign messages in their teaching activities were similar.

Second, calculations based on teachers' levels of knowledge of each message were performed for the TPB model and its subcomponents. At the same time, a stepwise regression analysis was calculated to estimate differences among behavioral intentions of teachers' variability to include the campaign messages in their teaching activities. All findings are presented in Tables 1 and 2.

For research question 3, based on the level of knowledge declared by teachers of the campaign messages, the TPB model subcomponents explained the variability on teachers' intentions to include the anti-obesity content of the campaign message in their teaching activities by types of schools. Findings confirmed the importance of the TPB model components to explain large variabilities in the percentages of teachers' behavioral intentions to include both campaign messages in their teaching activities by types of schools. Also, the subcomponents of the TPB framework explain important differences at the level of knowledge of both messages among types of school teachers' in Chile. Findings are given in Tables 3 and 4.

Table 1

Stepwise Regression Analysis on Teachers' Behavioral Intentions Based on Their Knowledge of the Campaign Messages

Knowledge of campaign messages	Stepwise regression analysis			Total BI variation explained by TPB Model
	1st	2nd	3rd	
Not know any of the messages of the campaign	PBC capacity 44.1%	ATTs experiential 13.6%	SN injunctive 6.1%	63.8%
Only knew one of the two messages of the campaign	ATTs experiential 70.2%	SN injunctive 6.9%	PBC capacity 5.3%	82.3%
Knew both messages of the campaign	ATTs instrumental 65.5%	SN descriptive 4.6%	ATTs experiential 4.1%	74.2%

Note. Behavioral Intentions are abbreviated as BI. Also first (1st), second (2nd), and third (3rd) denote the order in which each of the subcomponents of the TPB model entered the stepwise regression analysis, as the percentage of variability (R^2) on BI that they contributed within the TPB model.

$p < 0.05$.

Table 2

Descriptive Statistics and Stepwise Regression Analysis on Teachers' Behavioral Intentions Based on Their Knowledge of the Campaign Messages

Does not know any of the messages of the campaign				
TPB Construct	N	M	SD	Stepwise results
ATTs instrumental	35	5.88	1.05	
ATTs experiential	35	5.84	1.21	2nd: 13.6%
SN injunctive	35	5.42	1.16	3rd: 6.1%
SN descriptive	35	4.40	1.49	
PBC autonomy	35	4.35	1.64	
PBC capacity	35	5.42	1.11	1st: 44.1%
Total BI variation explained by TPB Model				63.8%
Only knew one of the two messages of the campaign				
TPB Construct	N	M	SD	Stepwise results
ATTs instrumental	67	5.74	1.24	
ATTs experiential	67	5.70	1.18	1st: 70.2%
SN injunctive	67	5.52	1.24	2nd: 6.9%
SN descriptive	67	3.90	1.70	
PBC autonomy	67	4.35	1.45	
PBC capacity	67	4.91	1.31	3rd: 5.3%
Total BI variation explained by TPB Model				82.3%
Knew both messages of the campaign				
TPB Construct	N	M	SD	Stepwise results
ATTs instrumental	128	5.79	1.29	1st: 65.5%
ATTs experiential	128	5.85	1.22	3rd: 4.1%
SN injunctive	128	5.45	1.15	
SN descriptive	128	3.92	1.62	2nd: 4.6%
PBC autonomy	128	4.34	1.66	
PBC capacity	128	5.11	1.43	
Total BI variation explained by TPB Model				74.2%

Note. Behavioral Intentions are abbreviated as BI. Also first (1st), second (2nd), and third (3rd) denote the order in which each of the components of the TPB model entered the stepwise regression analysis, as the percentage of variability (R^2) on BI that they contributed within the TPB model.

$p < 0.05$.

Table 3

Stepwise Regression Analysis on Teachers' Behavioral Intentions Based on Their Knowledge of Message 1 of the Campaign Studied

Type of school	Does not know the message				Knows the message			
	1st	2nd	3rd	Total BI variation explained	1st	2nd	3rd	Total BI variation explained
Municipal	ATTs experiential 70.5%	PBC capacity 13.7%	-	84.2%	ATTs instrumental 53.6%	SN descriptive 7.9%	-	61.5%
Private state-subsidized	PBC capacity 75.8%	-	-	75.8%	ATTs instrumental 79.3%	-	-	79.3%
Tuition	ATTs instrumental 80.7%	SN injunctive 10.3%	-	91%	ATTs experiential 72.8%	SN descriptive 5%	PBC capacity 1.8%	79.6%

Note. Behavioral Intentions are abbreviated as BI. Also first (1st), second (2nd), and third (3rd) denote the order in which each of the subcomponents of the TPB model entered the stepwise regression analysis, as the percentage of variability (R^2) on BI that they contributed within the TPB model.

$p < 0.05$.

Table 4

Stepwise Regression Analysis on Teachers' Behavioral Intentions Based on Their Knowledge of Message 2 of the Campaign Studied

Type of school	Does not know the message			Total BI variation explained	Knows the message			Total BI variation explained
	1st	2nd	3rd		1st	2nd	3rd	
Municipal	ATTs experiential 60%	SN injunctive 8.4%	-	68.4%	ATTs experiential 49%	SN descriptive 18.9%	ATTs instrumental 3.3%	71.2%
Private state-subsidized	PBC capacity 65.7%	SN injunctive 8.8%	-	74.4%	ATTs instrumental 71%	-	-	71%
Tuition	ATTs experiential 69.4%	PBC capacity 9.9%	-	79.3%	ATTs experiential 71.3%	SN descriptive 8.4%	-	79.7%

Note. Behavioral Intentions are abbreviated as BI. Also first (1st), second (2nd), and third (3rd) denote the order in which each of the subcomponents of the TPB model entered the stepwise regression analysis, as the percentage of variability (R^2) on BI that they contributed within the TPB model.

$p < 0.05$.

Discussion

In this study, we sought to advance our understanding of how teachers' behavioral intentions play a role in two specific health messages belonging to the “Choose to Live Healthy” Campaign in three different types of Chilean schools. Before this research, very few scholars had explored in Chile the use of the TPB framework across different behaviors.

The results of this work confirmed the relevance of the TPB model to explain teachers' intentions to include the campaign messages studied in their teaching activities. The TPB framework was able in all cases to explain teachers' variability across different types of settings and cultural realities. In addition, regardless of the level of knowledge of the two messages declared by the participants, it was importantly surprising the large variability obtained at the moment of analyzing behavioral intentions' variability percentages. From a practical point of view, after finding and organizing all the behavioral intentions calculated—which ranged from 61.5% up to 91%—it is coincidental with a central tendency of 15 percentages obtained (Median = 758). This finding constitutes a huge strength of the TPB model as it reveals that it has enough sensitivity to reflect variations across participants that belong to different schools in Chile. Also, the total behavioral intention variability found is much higher than the one found in other works that used the TPB model in Chile before, as the findings reported by Lagos et al. (2014), in the context of mathematical learning of Chilean middle school students; and the study of Galleguillos et al. (2019) on students' entrepreneurial behavioral intentions. Therefore, this finding proves that the TPB is an adequate theoretical and psychosocial framework useful to study educational behaviors across different contexts and situations in Chile, with impacts on social marketing and health communication.

In addition, after reviewing the results obtained across the six subcomponents of the TPB model—ATTs experiential, ATTs instrumental, SNs injunctive, SNs descriptive, PBC capacity, and PBC autonomy—it is confirmed that five of them made a fundamental contribution to the variability of the TPB constructs. In other words, each of the subcomponents mentioned before entered the stepwise regressions models, showing high sensitivity to interpret teachers' behavioral intentions across different contexts. However, the only exception found was that, from a total of 15 stepwise calculations performed, PBC autonomy did not enter any regression

calculations. A possible explanation for this last finding is based on the fact that teachers did not perceive—at the moment of this study—the inclusion of both campaign messages as a priority among their teaching activities. Nevertheless, the large number of combinations revealed by the subcomponents of the model agrees with Fishbein and Ajzen’s (2010) original model.

Interestingly, another aspect to highlight was that attitudes explained the larger percentage of variations of teachers’ behavioral intentions to include the campaign messages in their teaching activities. Specifically, instrumental attitudes ranged from 53.6% up to 80.7% (Median = 71%), and experiential attitudes fluctuated from 41% up to 72.8% (Median = 69.4%). Next, at a lower level than attitudes, both types of social norms explained the percentage of variability of teachers’ behavioral intentions, with a median for social norms injunctive of 8.4% and a median of social norms descriptive of 7.9%. At the end, perceived behavioral control capacity contributed with a median of 11.8% in the model. This greater explanatory tendency of attitudes is consistent with the results found by Galleguillos et al. (2019). However, considering the sensitivity of the TPB framework, much more research is still required among other communicational topics based on the Chilean context.

Lastly, this work agrees with the findings obtained by Brown and colleagues (2016). In particular, after studying multiple school interventions, scholars found that the most popular theoretical framework used was Social Cognitive Theory (SCT). However, Brown et al. (2016) emphasized that its appropriateness does not fit all types of social interventions problems, as new approaches and tools are required to respond to different social and cultural realities. In this sense, this study proves that the TPB model constitutes a suitable theoretical framework that still needs to be included by experts with a multisector perspective. Thus, just as Caballero et al. (2017) proposed, the inclusion of health communication expertise from diverse teams establishes powerful interventions that, directly and indirectly, affect peoples’ beliefs and actions.

Conclusion

This study confirmed the great relevance and effectiveness of the TPB model to contribute to the interpretation of behavioral intentions variability across different types of behaviors, including those aimed at achieving healthier behaviors. Moreover, after the findings and contributions of this study, it is absolutely appropriate to consider the TPB as a theoretical framework validated and checked for obesity rates in Chile. Thus, only by studying particular contexts and cultures it is possible to effectively design, implement, and evaluate actions of social marketing, health communication campaigns, and other future behaviors.

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