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International Journal of NONPROFIT AND VOLUNTARY SECTOR MARKETING

VOLUME 23 NUMBER 2 MAY 2018
ISSN 1465-4520

International Journal of
NONPROFIT AND VOLUNTARY SECTOR MARKETING

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International Journal of
NONPROFIT AND VOLUNTARY SECTOR MARKETING

Volume 23, Issue 2

May 2018

RESEARCH ARTICLES

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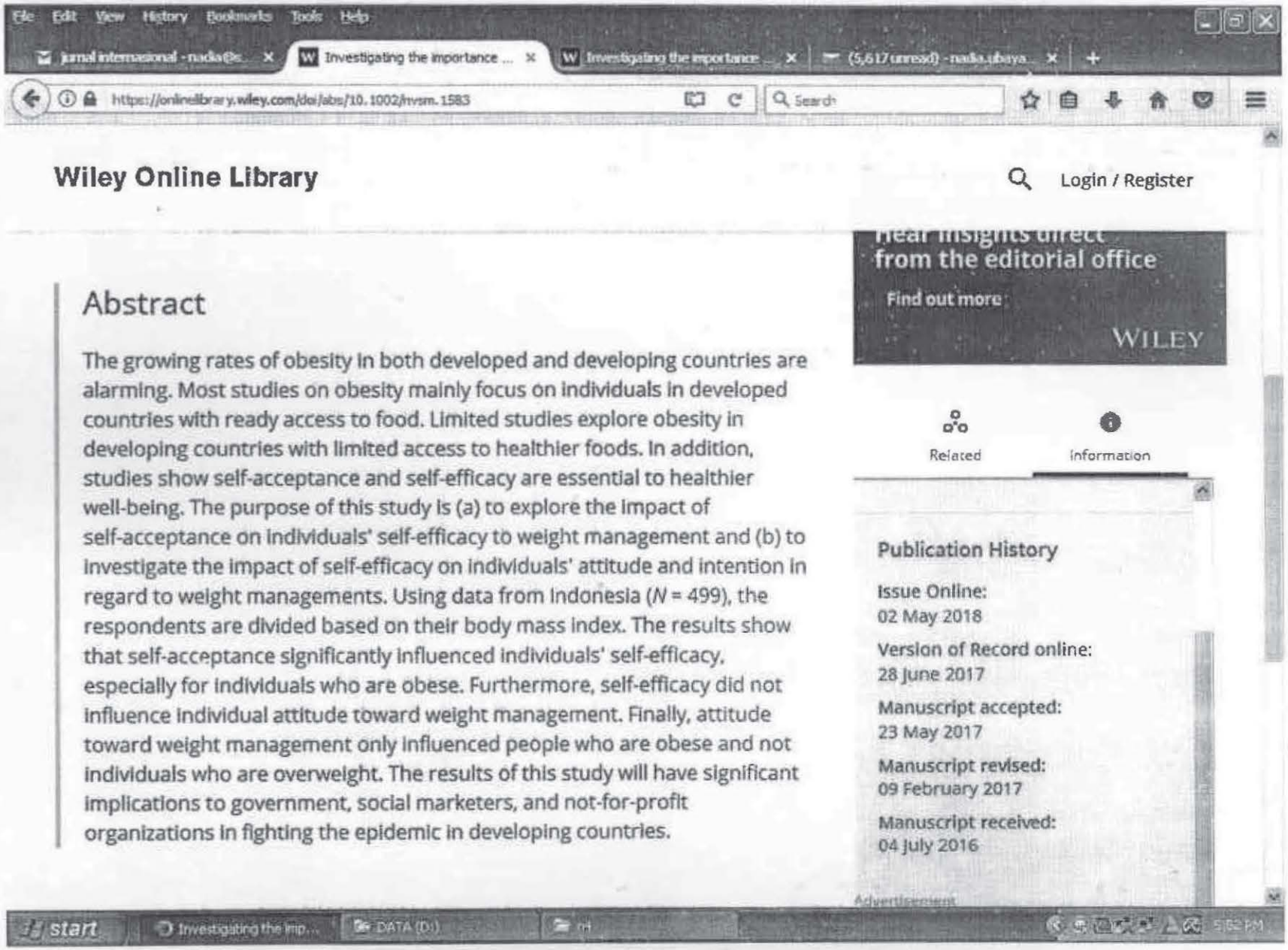

Abstract

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International Journal of Nonprofit and Voluntary Sector Marketing / Volume 23, Issue 2

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Denni Arli, Nadia Sutanto

First published: 28 June 2017
https://doi.org/10.1002/nvsm.1583

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Received: 4 July 2016 | Revised: 9 February 2017 | Accepted: 23 May 2017

DOI: 10.1002/nvsm.1583

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RESEARCH ARTICLE

Investigating the importance of self-acceptance and self-efficacy on weight management in a developing country

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The growing rates of obesity in both developed and developing countries are alarming. Most studies on obesity mainly focus on individuals in developed countries with ready access to food. Limited studies explore obesity in developing countries with limited access to healthier foods. In addition, studies show self-acceptance and self-efficacy are essential to healthier well-being. The purpose of this study is (a) to explore the impact of self-acceptance on individuals' self-efficacy to weight management and (b) to investigate the impact of self-efficacy on individuals' attitude and intention in regard to weight managements. Using data from Indonesia ($N = 499$), the respondents are divided based on their body mass index. The results show that self-acceptance significantly influenced individuals' self-efficacy, especially for individuals who are obese. Furthermore, self-efficacy did not influence individual attitude toward weight management. Finally, attitude toward weight management only influenced people who are obese and not individuals who are overweight. The results of this study will have significant implications to government, social marketers, and not-for-profit organizations in fighting the epidemic in developing countries.

1 | INTRODUCTION

The prevalence of obesity has been increasing significantly in both developed and developing nations (Bhurosy & Jeewon, 2014; Grammatikopoulou, Panayiotoglou, & Hassapidou, 2008; Li, Dibley, Sibbritt, & Yan, 2010; Mcleay & Oglethorpe, 2013; Usfar, Lebenthal, Achadi, & Hadi, 2010). In 2014, more than 1.9 billion adults 18 years old and over are overweight; 600 million are obese (WHO 2015). Obesity is responsible for about 5% of all deaths a year globally with an estimated cost of $2 trillion annually (McKinsey, 2014). In addition, people's diets have been significantly changed with significantly more fat, meat, sugars, and bigger portion sizes (Bhurosy & Jeewon, 2014; Previte & Gurrieri, 2015; Kemp & Grier, 2013).

Between 1980 and 2008, the number of people affected in developing countries rose from 250 million to 904 million (Overseas Development Institute, 2014). Studies on obesity prior to 1989 suggest that obesity in the developing countries is essentially a disease of the socioeconomic elite (Michaelidou, Christodoulides, & Torova, 2012; Sobal & Stunkard, 1989; Stunkard, 2000). Nonetheless, recent studies show that obesity in the developing world can no longer be considered a disease of people with higher socioeconomic status (SES). For example, in Brazil, obesity is increasing faster among people with lower SES (Gupta, Goel, Shah, & Misra, 2012; Monteiro, Conde, & Popkin, 2004; Monteiro, Mondini, Souza, & Popkin, 1995). Improved access to food and decreased physical activity level have been considered the main cause of overweight and chronic metabolic diseases in developing countries (Hoffman, 2004; Bhurosy & Jeewon, 2014). To make matters worse, in the last few years, childhood obesity is now much higher in developing countries than in developed countries (World Health Organization, 2009). One of the key issues related to the cause of obesity is mental health (Bacon, Stern, Van Loan, & Keim, 2005; Myers & Rosen, 1999). Studies indicated that there is a correlation between mental health and individuals' level of obesity (National Obesity Observatory, 2011; Vaidya, 2006). Individuals with low self-acceptance are more likely to suffer from various health consequences (Scott et al., 2008). Moreover, studies show that strengthening an individual's self-acceptance beliefs is essential to the psychological well-being of that individual (National Obesity Observatory, 2011; MacInnes, 2006). Unconditional self-acceptance means individuals are able to accept themselves unconditionally whether other people approve of them or they behave correctly (MacInnes, 2006; Ellis, 1977). People's inability to unconditionally accept themselves sometimes extends to their inability to accept other people (Flett, Besser, Davis, & Hewitt, 2003).

Thus, the purpose of this study is (a) to explore the impact of self-acceptance on individuals' self-efficacy to weight management and (b) to investigate the impact of self-efficacy on individuals' attitudes and intentions regarding to weight management. This study will make several contributions: (a) investigating the influence of self-acceptance as a precursor to self-efficacy and, subsequently, testing

the impact of self-efficacy to weight management; (b) this is one of the few studies, exploring weight management in a developing country (i.e., Indonesia); and (c) the results of this study will have significant implications for governments, social marketers, and not-for-profit organizations in fighting the weight epidemic in developing countries. The end goal of this study support social marketing focus, which is to improve individuals' welfare and society (i.e., improving weight management) instead of benefiting the institution or the company that are doing the social marketing activities (Stead, Hastings, & McDermott, 2007).

2 | LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Based of self-efficacy theory (Bandura, 1977), the study proposes that self-acceptance will influence individuals' self-efficacy. Subsequently, self-efficacy will influence individuals' attitude and intentions. The hypothesis will be based on three categories of commonly accepted body mass index (BMI) ranges from normal weight, overweight, and obese.

2.1 | Self-acceptance

Derived from self-concept, self-acceptance can be defined as to what extent the self-concept is congruent with the individual's description of the individual's "ideal self" (Crowne & Stephens, 1961). Rubin (1967, p. 234) describes self-acceptance as "a willingness to confront ego-alien as well as ego-syntonic aspects of the self and to accept rather than deny their existence." One key aspect of self-acceptance is the ability and willingness to let others see one's true self (Carson & Langer, 2006). It results in an individual feeling about him or herself as one who has "unique worth" (Rogers, 1951; Shepard, 1979). The self-rejecting individuals often consider themselves of little worth and are likely to have other symptom of maladjustment (Shepard, 1979). Self-acceptance is critical to mental health (Carson & Langer, 2006). Subsequently, lower levels of unconditional self-acceptance correlate with higher levels of depression, anxiety (Carson & Langer, 2006; Chamberlain & Haaga, 2001; Flett et al., 2003; Shepard, 1979), and parental workaholism (Chamberlin & Zhang, 2009). Greenspon (2000) suggested that feelings of conditional self-acceptance are central to both the cause and tendency of perfectionism. It is feasible to suggest that self-acceptance will influence people's self-efficacy in regard to weight management. Hence, based on three categories of BMI (normal weight, overweight, obese), this study hypothesizes:

> $H1_{NORMAL}$. *Self-acceptance has a direct, positive influence on (a) negative emotions, (b) available, (c) social, (d) physical, and (e) positive self-efficacy.*
>
> $H1_{OVERWEIGHT}$. *Self-acceptance has a direct, positive influence on (a) negative emotions, (b) available, (c) social, (d) physical, and (e) positive self-efficacy.*
>
> $H1_{OBESE}$. *Self-acceptance has a direct, positive influence on (a) negative emotions, (b) available, (c) social, (d) physical, and (e) positive self-efficacy.*

Moreover, a significant relationship exists between self-acceptance and self-esteem. Meisenhelder (1985) suggested that self-esteem is essential to maintaining mental and physical health. Individuals with high self-acceptance are more confident in their ability to accomplish their efforts. Consequently, they are more likely to have positive attitudes toward weight loss. Flett et al. (2003) found higher levels of unconditional self-acceptance correlated with lower levels of depression. Hence, the study suggests the following:

> $H2_{NORMAL}$. *Self-acceptance has a direct, positive influence on attitudes.*
>
> $H2_{OVERWEIGHT}$. *Self-acceptance has a direct, positive influence on attitudes.*
>
> $H2_{OBESE}$. *Self-acceptance has a direct, positive influence on attitudes.*

2.2 | Self-efficacy

Self-efficacy theory is an integrative cognitive-social learning framework empirically tested in a variety of treatment contexts (Bandura, 1977). The theory suggests all processes of psychological change operate through the adaptation of the individual's expectancies of personal mastery or efficacy (Bandura, 1982). Self-efficacy can be defined as an individual's judgement of her or his ability to cope effectively in a situation (Bandura, 1977; Clark et al., 1991). It does not reflect an individual's skills; instead, it reflects to an individual's judgement of what he or she can do with the skills they possesses (de Vries, Dijkstra, & Kuhlman, 1988).

Self-efficacy is different from perceived behavioural control. Self-efficacy is related to factors internal to the individual, whereas perceived behavioural control is related to external factors (e.g., cooperation of other people and availability of time and money; Ajzen & Timko, 1986). Individuals' persistence and efforts to adopt specific behaviour are closely correlated to the individuals' level of perceived self-efficacy (Bandura, 1977; Lee et al., 2011). Studies show that individuals with low efficacy expectations are unlikely to resist temptation to use the substance (Abrams & Niaura, 1987), less likely to perform physical activity (Lee, Kuo, Fanaw, Perng, & Juang, 2012; Strachan, Woodgate, Brawley, & Tse, 2005; Sweet, Fortier, Strachan, & Blanchard, 2012), more likely to suffer from postnatal depressive symptomatology (Leahy-Warren, McCarthy, & Corcoran, 2012), experience phobias (Bandura et al., 1980), smoke (Stuart et al., 1994), and engage in problem drinking (Burling et al., 1989). In the context of weight loss, there are inconclusive results. Few studies found that self-efficacy is predictor of success of weight loss (Bernier & Avard, 1986; Bradley, Poser, & Johnson, 1980; Brownell & Cohen, 1995). In contrast, other studies found that self-efficacy is not a significant predictor of weight loss (e.g., Chao et al., 2000; Dennis & Goldberg, 1996; Fontaine & Cheskin, 1997). Considerable support exists for the role of self-efficacy as a determinant of intention (Fishbein & Yzer, 2003; Sheeran, Abraham, & Orbell, 1999; Sheppard, Hartwick, & Warshaw, 1988). Theoretically, self-efficacy will have a direct effect on an individuals' attitude toward weight management. Thus, the study proposes the following:

$H3_{NORMAL}$. *(a) Negative emotions, (b) available, (c) social, (d) physical, and (e) positive self-efficacy have a direct positive influence on attitude.*

$H3_{OVERWEIGHT}$. *(a) Negative emotions, (b) available, (c) social, (d) physical, and (e) positive self-efficacy have a direct positive influence on attitude.*

$H3_{OBESE}$. *(a) Negative emotions, (b) available, (c) social, (d) physical, and (e) positive self-efficacy have direct positive influence on attitude.*

$H4_{NORMAL}$. *Attitude to lose weight has a direct, positive influence on (a) intention to exercise, (b) intention to lose weight, and (c) intention to eat healthy.*

$H4_{OVERWEIGHT}$. *Attitude to lose weight has a direct, positive influence on (a) intention to exercise, (b) intention to lose weight, and (c) intention to eat healthy.*

$H4_{OBESE}$. *Attitude to lose weight has a direct, positive influence on (a) intention to exercise, (b) intention to lose weight, and (c) intention to eat healthy.*

Based on the previous discussion, Figure 1 summarized the conceptual framework of this study.

2.3 | Attitude

The attitude toward behaviour, either positive or negative, is a function of the beliefs concerning the perceived consequences of performing a specific action and a personal evaluation of each of those consequences (Deshpande, Basil, & Basil, 2009; Godin, 1993). An individual who holds strong beliefs that positively valued outcomes will result from performing the behaviour (e.g., physical exercise) will have a positive attitude toward the behaviour. On the contrary, an individual who holds strong belief that negatively valued outcomes will result from the behaviour will have a negative attitude (Ajzen & Fishbein, 1980; Montano & Kasprzyk, 2008).

Studies have validated that attitude influences individuals' intentions toward various health-related behaviour in general (Conner & Godin, 2007; Godin & Kok, 1996) and in specific behaviour such as eating a low-fat diet (Armitage & Conner, 1999), exercise (Blue, 1995; Hagger, Chatzisarantis, & Biddle, 2002; Hausenblas, Carron, & Mack, 1997), leisure participation (Ajzen & Driver, 1991), family planning (Fishbein, Jaccard, Davidson, Ajzen, & Loken, 1980), smoking (Davey, McClenahan, & Zhao, 2014), using condoms (Chan & Fishbein, 1993; Trafimow, 2000), mammography utilization (Montano et al., 1997), sustainable consumption (De Pelsmacker, Driesen, & Rayp, 2003; Tanner & Kast, 2003; Vermeir & Verbeke, 2006), and weight loss (Schifter & Ajzen, 1985; Sejwacz, Ajzen, & Fishbein, 1980). Studies show that attitude displays satisfactory reliability and validity toward intentions (Chatzisarantis et al., 2005; Ajzen & Fishbein, 1980; Theodorakis, 1994). Despite their weight, individuals' attitudes toward weight lost will significantly influence their intention to exercise, lose weight, and eat healthy. Hence, the study proposes the following:

3 | METHODOLOGY

3.1 | Sample

The research context for this study is Indonesia. Indonesia is the fourth most populous nation with 255 million people (CIA, 2015). Indonesian gross domestic product per capita is around US$10,700 (CIA, 2015). A recent report reveals Indonesia has just become the tenth most obese country with the number of overweight and obese adults doubling in the last decade (Ng et al., 2014). Although successfully reducing malnutrition, Indonesia is now facing the problem of obesity (Faizal, 2012). Obesity often coexists with undernutrition with the percentage of obese people aged 18 and over at 21.7%. What is more, 14% of Indonesia's children are overweight, increase from 11% in 2007 (Usfar et al., 2010).

The researcher use convenience sampling where the researcher had an access to distribute the current survey. The researcher collected data for this study from a large university in three different cities in Indonesia: Surabaya, Yogyakarta, and Solo. Several research assistants distributed a paper-based survey to the students and staff in those universities. In regard to students, the researcher distributed the survey to students in class and was able to supervise the data collecting. In addition, the researcher also distributed the survey to the staff in a large private hospital in Surabaya, Indonesia. The researchers were allowed to distribute the survey within this hospital. The benefit of getting access to this hospital was to improve the diversity and range of sample in regard to their age. A total of 575 surveys were distributed. Incomplete surveys with too many missing values

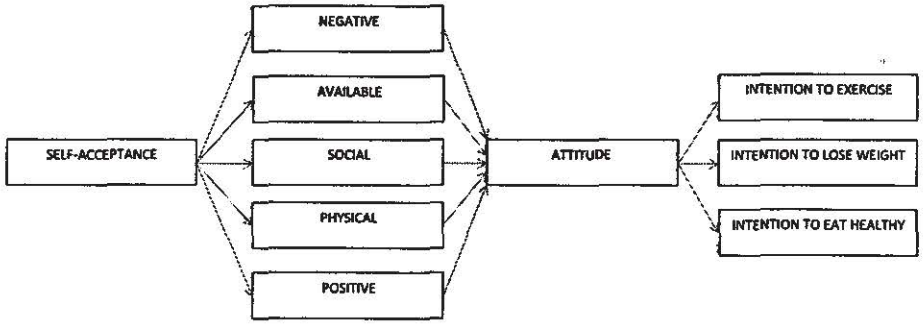

FIGURE 1 Conceptual framework

were removed from the sample. Overall, 499 samples were usable. Respondents had to fill in their height and weight to calculate their BMI. Subsequently, the sample was divided to three BMI levels. Normal weight with a BMI of 18.5–24.9, overweight with a BMI of 25–29.9, and obese with a BMI of 30 or greater. In this study, 55% were normal weight, 27% were overweight, and 18% were obese. In the sample, 29% are male, 67% are female, and 4% were undeclared. Regarding age, 50% of the respondents were between 18 and 24 years, 28% were between 25 and 34, 14% were between 35 and 44%, and 8% were above 45 years old. Moreover, 52% of the respondents had an income lower than 20 million Rupiah, around US$1,467 (1USD = 13,632 Rupiah, as of 18 May 2016) and only 7% had an income above 81 million Rupiah, around US$5,941). Finally, 40.9% of the respondents had high school degree, followed by undergraduate (29.3%) and diploma (14.8%). Table 1 summarized the demographic profile of the respondents.

3.2 | Measurement items

Self-acceptance was measured using Ryff's (1995) psychological well-being scales (e.g., "in general, I feel confident and positive about myself"). Self-efficacy was measured using "Weight Efficacy Life-Style Questionnaires" from Clark et al. (1991). The self-efficacy scale consists of five constructs: (a) negative emotions (e.g., "I can resist eating when I am anxious (nervous)"); (b) availability (e.g., "I can control my eating on the weekends"); (c) social pressure (e.g., "I can resist eating when I have to say 'no' to others"); (d) physical discomfort (e.g., "I can resist eating when I fee physically run down"); and (e) positive activities (e.g., "I can resist eating when I am watching TV"). The constructs were measured using Likert scales with 1 = *strongly agree*; 7 = *strongly disagree*.

Attitude toward losing weight and intention to lose weight, intention to exercise, and intention to eat healthy were measured using Ajzen's (1991) scales: attitude (e.g., "for me to lose weight in the next six month is"; 1 = *good*; 7 = *bad*) and intention to lose weight (e.g., "I intend to lose weight in the next six months"; 1 = *strongly agree*; 7 = *strongly disagree*), intention to exercise (e.g., "I intend to exercise in the next 7 days"; 1 = *extremely likely*; 7 = *extremely unlikely*), and intention to eat healthy (e.g., "I intend to eat more healthfully in the next 7 days"; 1 = *extremely likely*; 7 = *extremely unlikely*).

TABLE 1 Demographic profile of respondents

	Frequency	Percentage
Gender		
Male	143	29%
Female	227	67%
Undeclared	19	4%
Age		
18–24 years	248	50%
25–34 years	142	28%
35–44 years	70	14%
45 years<	39	8%
Income		
<Rp. 20 million	257	52%
Rp. 21–40 million	94	19%
Rp. 41–80 million	59	12%
Rp 81 million	33	7%
Undeclared	56	11%
Education		
High school or lower	204	40.9%
Diploma	74	14.8%
Undergraduate	146	29.3%
Postgraduate	55	11.0%
Others	4	0.8%
Undeclared	16	3.2%
BMI		
Normal weight	278	55%
Overweight	133	27%
Obese	88	18%

3.3 | Data analysis

The study uses Structural Equation Modelling, which become as a powerful technique in combining factor analysis, path analysis, and regression into one assessment (Chin & Todd, 1995). The analysis followed Anderson and Gerbing's (1988) two-stage procedure. First, the goodness of the measurement instruments was analysed by Confirmatory Factor Analysis. Second, the structural relations among the theoretically proposed latent variables were analysed through Structural Equation Modelling (SEM). Both the measurement model and the causal relations model were estimated for the model fit using the Maximum Likelihood Methods (Satorra and Bentler, 1994). The goodness-of-fit indicator for the measurement instrument (NFI = 0.850; TLI = 0.926; CFI = 0.936; IFI = 0.937; RMSEA = 0.036) easily exceeds the commonly accepted critical values (Anderson and Gerbing, 1988).

Table 2 shows that the measurement instrument reliability can be confirmed as Cronbach's alpha exceeds the critical value of 0.8 (Cronbach, 1951) and Composite Reliability and Average Variance Extracted indexes also exceed the critical value of 0.7 and 0.5, respectively, except for positive activities (Fornell & Larckler, 1981). In addition to the goodness-fit indicators, the researcher used two criteria to verify convergent validity. The results show that the observed variables were significant and the average loads were above 0.7 (Hair et al., 2006).

Finally, the researcher checked the measurement model to ensure discriminant validity. First, interfactor correlation was significant below 1. Second, for each pair of factors, the researcher verified the difference of χ^2 between the proposed measurement model and a restricted model where the correlation between said factors was set at 1 (Fornell & Larcker, 1981) was significant. The researcher conducted the variance extracted test and found that AVE for each factor was higher than the square of the correlation coefficient with each of the other factors (see Table 3). Thus, the test confirms the measurement model discriminant validity (Fornell & Larcker, 1981).

4 | RESULTS

4.1 | Normal weight

The results show that self-acceptance significantly influenced negative self-efficacy (β = 0.277, p < .01), available self-efficacy (β = 0.149,

TABLE 2 Confirmatory factor analysis

		Convergent validity		Reliability		
Factor	Item	Factor loading	Loading average	Cronbach's	CR	AVE
Negative (NEG)	NEG01	0.879	0.818	0.883	0.892	0.676
	NEG02	0.921				
	NEG03	0.755				
	NEG04	0.715				
Availability (AVA)	AVA01	0.751	0.829	0.887	0.900	0.693
	AVA02	0.863				
	AVA03	0.929				
	AVA04	0.774				
Social pressure (SP)	SP01	0.824	0.803	0.788	0.887	0.610
	SP02	0.761				
	SP03	0.824				
Physical discomfort (PD)	PD01	0.693	0.783	0.872	0.848	0.585
	PD02	0.891				
	PD003	0.745				
Positive activities (PA)	PA01	0.606	0.683	0.827	0.726	0.471
	PA02	0.667				
	PA03	0.776				
Self-acceptance (SA)	ITEH01	0.768	0.749	0.970	0.839	0.569
	ITEH02	0.612				
	ITEH03	0.857				
	ITEH04	0.760				
Attitude (ATT)	ATT01	0.955	0.914	0.958	0.963	0.840
	ATT02	0.946				
	ATT03	0.949				
	ATT04	0.931				
	ATT04	0.790				
Intention to lose weight (ITLW)	ITLW01	0.972	0.974	0.972	0.983	0.949
	ITLW02	0.969				
	ITLW03	0.982				
Intention to exercise (ITE)	ITE01	0.955	0.923	0.945	0.903	0.549
	ITE02	0.942				
	ITE03	0.871				
Intention to eat healthy (ITEH)	ITEH01	0.943	0.962	0.970	0.971	0.629
	ITEH02	0.969				
	ITEH03	0.973				
		Goodness-of-fit measures				
		BBNFI	TLI	CFI	IFI	RMSEA
$X^2(1731\ df) = 2,813.605\ (p = .00)$		0.850	0.926	0.936	0.937	0.036

Notes. Measure instrument psychometric properties. CR = Composite Reliability; AVE = Average Variance Extracted.

$p < .01$), and social self-efficacy ($\beta = 0.310$, $p < .01$). Thus, $H1a\text{-}_{NORMAL}$, $H1b\text{-}_{NORMAL}$, and $H1c\text{-}_{NORMAL}$ are supported. Nonetheless, self-acceptance did not influence physical self-efficacy and positive self-efficacy. Hence, $H1d\text{-}_{NORMAL}$ and $H1e\text{-}_{NORMAL}$ are not supported. Moreover, the results support $H2_{NORMAL}$: self-acceptance significantly influenced people's attitude toward weigh loss ($\beta = 0.148$, $p < .05$).

Furthermore, self-efficacy significantly influenced positive self-efficacy. Thus, $H3e\text{-}_{NORMAL}$ is supported. However, negative self-efficacy, available self-efficacy, social self-efficacy, and physical self-efficacy did not influence attitude toward losing weight. Therefore, $H3a\text{-}_{NORMAL}$, $H3b\text{-}_{NORMAL}$, $H3c\text{-}_{NORMAL}$, and $H3d_{NORMAL}$ are not supported. Finally, attitude toward losing weight significantly influenced individuals' intention to lose weight ($\beta = 0.845$, $p < .01$) but not intention to exercise and eat healthy. Thus, $H4a\text{-}_{NORMAL}$ is supported but not $H4b\text{-}_{NORMAL}$ and $H4c\text{-}_{NORMAL}$. Positive value means that individuals who have a negative attitude toward losing weight are more likely to have less intention to lose weight in the next 6 months.

4.2 | Overweight

For individuals who are overweight, self-acceptance significantly influenced negative self-efficacy ($\beta = 0.215$, $p < .05$) and available self-

TABLE 3 Discriminant validity—All constructs

	1	2	3	4	5	6	7	8	9	10
1. Negative	0.676	0.183	0.162	0.123	0.095	0.068	0.007	0.001	0.000	0.002
2. Availability	0.428**	0.693	0.352	0.130	0.294	0.031	0.035	0.010	0.019	0.006
3 social pressure	0.402**	0.593**	0.610	0.142	0.212	0.055	0.027	0.011	0.009	0.018
4. Physical discomfort	0.351**	0.360**	0.377**	0.585	0.279	0.003	0.072	0.063	0.005	0.000
5. Positive activities	0.309**	0.542**	0.460**	0.528**	0.471	0.010	0.065	0.042	0.015	0.003
6. Self-acceptance	0.261**	0.176**	0.235**	0.054	0.101	0.569	0.031	0.007	0.000	0.001
7. Attitude	0.082	0.188**	0.163**	0.268**	0.255**	0.176**	0.840	0.648	0.002	0.001
8. Intention to lose weight	−0.023	0.100*	0.103*	0.251**	0.206	0.085	0.805**	0.949	0.005	0.003
9. Intention to exercise	−0.015	−0.137**	−0.095	−0.070	−0.121**	0.015	−0.044	−0.072	0.549	0.257
10. Intention to eat healthy	0.040	−0.077	−0.134**	−0.018	−0.053	0.038	−0.037	−0.051	0.507**	0.629
Mean	2.95	3.94	3.25	3.27	3.16	2.64	2.95	3.16	4.69	4.94
Std. Dev	1.72	1.81	1.60	1.66	1.60	1.12	1.85	2.19	1.78	1.82

Notes. Values below the diagonal are bivariate correlations between the constructs, bold diagonal elements represents the Average Variance Extracted (AVEs) for the relevant construct; values above the diagonal represent squared correlations; and values below the diagonal represent correlations

efficacy ($\beta = 0.214$, $p < .05$). Hence, H1a-$_{OVERWEIGHT}$ and H1b-$_{OVERWEIGHT}$ are supported. However, self-acceptance did not significantly influence social self-efficacy, physical self-efficacy, and positive self-efficacy. Therefore, H1c-$_{OVERWEIGHT}$, H1d-$_{OVERWEIGHT}$, and H1e-$_{OVERWEIGHT}$ are not supported. Moreover, self-acceptance did not support people's attitude toward weight loss. Thus, H2$_{OVERWEIGHT}$ is not supported.

All self-efficacies did not significantly influence attitude toward losing weight. Hence, H3a-$_{OVERWEIGHT}$, H3b-$_{OVERWEIGHT}$, H3c-$_{OVERWEIGHT}$, H3d-$_{OVERWEIGHT}$, and H3e-$_{OVERWEIGHT}$ are not supported. Finally, attitude toward losing weight significantly influenced intention to lose weight ($\beta = 0.866$, $p < .01$) but not intention to exercise and eat healthy. Therefore, H4a-$_{OVERWEIGHT}$ is supported while H4b-$_{OVERWEIGHT}$ and H4c-$_{OVERWEIGHT}$ are not supported.

4.3 | Obese

The results for this group show that, except for physical self-efficacy, self-acceptance significantly influenced negative self-efficacy ($\beta = 0.523$, $p < .01$), available self-efficacy ($\beta = 0.400$, $p < .01$), social self-efficacy ($\beta = 0.421$, $p < .01$), and positive self-efficacy ($\beta = 0.407$, $p < .01$). Thus, H1a-$_{OBESE}$, H1b-$_{OBESE}$, H1c-$_{OBESE}$, and H1e-$_{OBESE}$ are supported while H1d-$_{OBESE}$ is not supported. Moreover, for individuals who are obese, self-acceptance significantly influenced people's attitude toward weight loss ($\beta = 0.366$, $p < .01$).

Furthermore, the finding supports H3a-$_{OBESE}$ and H3d-$_{OBESE}$. Negative self-efficacy ($\beta = -0.342$, $p < .01$) negatively influenced individuals' attitudes toward losing weight. It shows individuals with high emotion self-efficacy are more likely to perceive weight loss negatively. In contrast, physical self-efficacy positively influenced an individual's attitude toward weight loss ($\beta = 0.313$, $p < .01$). It shows that individuals with high physical self-efficacy are more likely to have positive attitude toward weight loss. However, available self-efficacy, social self-efficacy, physical self-efficacy, and positive self-efficacy did not influence individuals' attitudes toward weight loss. Hence, H3b-$_{OBESE}$, H3c-$_{OBESE}$, H3d-$_{OBESE}$, and H3e-$_{OBESE}$ are not supported. Finally, individuals' attitudes toward losing weight significantly influenced their intention to lose weight ($\beta = 0.779$, $p < .01$), intention to exercise ($\beta = 0.218$, $p < .05$), and intention to eat healthy ($\beta = 0.238$, $p < .05$). Therefore, H4a-$_{OBESE}$, H4b-$_{OBESE}$, and H4c-$_{OBESE}$ are supported. Obese individuals who have negative attitude toward losing weight are more likely to have less intention to lose weight, exercise, and eat healthy in the future. Table 4 summarizes the structure equation model results for all weight categories.

5 | DISCUSSION AND IMPLICATIONS

The results show that self-acceptance significantly influences individuals' self-efficacy, especially for individuals who suffer obesity. Individuals with low self-acceptance are more likely to have low self-efficacy and are thus unlikely to resist temptation. People with low self-acceptance will suffer from excessive focus on evaluation, which includes social comparisons with other people (Ellis, 1995).

Self-acceptance in this study does not focus on physical acceptance but focuses on having a positive self-image and being more confident about one's self. In the context of Indonesia, this study shows low self-acceptance resulted in low self-efficacy. The study supports other research that suggests obese women tend to eat more in response to emotional arousal and tend to have more of a negative self-image than their nonobese counterparts (Dennis & Goldberg, 1996; Hooker & Convisser, 1983). Therefore, social marketers need to train individuals to first accept themselves in spite of their deficiencies. Individuals need to understand their strengths and weaknesses and learn to accept themselves. The positive self-image will eventually improve their self-efficacies. Confidence is needed to support people's ability to accomplish the behaviours required to lose weight.

Moreover, not all self-efficacy significantly influences people's attitude toward losing weight. For people who suffer from obesity, negative emotions self-efficacy has a negative impact of their attitude. Obese individuals with low self-efficacy on emotions tend to perceive losing weight as unpleasant and painful. Moreover, obese individuals with high physical self-efficacy are more likely to see the positive aspects of weight loss.

TABLE 4 Structural equation model results

Hypotheses	Structural relationship	Standardized coefficient		
		Normal	Overweight	Obese
H1a	Self-acceptance → negative	**0.277****	**0.215***	**0.523****
H1b	Self-acceptance → available	0.149*	0.214*	0.400**
H1c	Self-acceptance → social	**0.310****	0.167	0.421**
H1d	Self-acceptance → physical	0.002	0.049	0.218
H1e	Self-acceptance → positive	0.131	0.098	0.407**
H2	Self-acceptance → attitude	**0.148***	0.134	**0.363***
H3a	Negative → attitude	−0.057	−0.233	**−0.566****
H3b	Available → attitude	0.014	0.092	0.238
H3c	Social → attitude	−0.168	−0.038	0.237
H3d	Physical → attitude	0.123	0.377	**0.313***
H3e	Positive → attitude	**0.278***	0.046	−0.127
H4a	Attitude → intention to lose weight	**0.845****	**0.866****	**0.783****
H4b	Attitude → intention to exercise	−0.035	0.085	**0.218***
H4c	Attitude → intention to eat healthy	−0.044	0.133	**0.238***

**$p < .01$.

*$p < .05$; $X^2(1{,}809\ df) = 3{,}102.465$, $p = .00$; NFI = 0.835; TLI = 0.915; CFI = 0.923; IFI = 0.924; RMSEA = 0.038.

Bold = Significant.

In general, the results of this study show that specific self-efficacies affected individuals differently and not all self-efficacies correlated well with weight loss (Edell, Edington, Herd, O'Brien, & Witkin, 1987). Social marketers can focus on increasing emotional self-efficacy. Training and weight loss workshop can be designed to specifically train individuals to handle their emotional situations while trying to lose weight. In addition, tips and strategies to maintain healthy weight when obese individuals are unwell or unfit are also crucial to maintain a positive attitude toward weight loss.

Furthermore, individuals who are obese tend to have a negative perception toward weight loss and will be less likely to lose weight, exercise, and eat healthy. Individuals who are overweight are also less likely to have intentions to lose weight. Obese individuals' efforts to reduce body weight usually meet with very limited success. The findings support the study of Schifter and Ajzen (1985) that found people who have positive attitude toward losing weight and also believed that they were capable of doing so were more likely to succeed. This is a challenge faced by social marketers and public policy makers in developing countries. They need to focus on educating about the benefit and importance of losing weight, which may increase their intention to lose weight, exercise more, and eat healthier. Finally, social marketers can create an intervention programme to enhance individuals' self-acceptance through family, community, and policy. The effort can start from the family, which often serves as a role model for nutrition and physical activity (Evans, Christoffel, Necheles, & Becker, 2010). Strong parental support and social network that indicate acceptance can help reduce unhealthy eating behaviours among children and adolescents (National Obesity Observatory, 2011). With a combination of clear segmentation and effective content (i.e., improving individuals' self-acceptance), social marketing can be a powerful tool for the design of school- and community-based intervention.

To conclude, this study has several limitations. First, the study used samples from large cities in Indonesia, which offer more access to healthier foods and sport facilities. Future studies should investigate people living in rural area with less access to healthier food. The study may investigate their food choice behaviour and physical activities. Second, despite the value of using BMI, it has some limits. The scale may overestimate body fat in individuals who have a muscular build and may underestimate body fat in individuals who have lost muscle (National Heart, Lung and Blood Institute, 2016). In addition, the weight and height was self-reported. However, with anonymity, respondents may reveal their genuine weight and height. Third, similar to other studies, it is difficult to determine whether self-efficacy affects weight loss or whether weight loss affects self-efficacy (Bandura, 1977; Dennis & Goldberg, 1996). Future research may facilitate an experiment to explore the effect of reciprocal interaction among behavioural, cognitive-personal, and environmental components of individuals to determine the main cause of weight loss.

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How to cite this article: Arli D, Sutanto N. Investigating the importance of self-acceptance and self-efficacy on weight management in a developing country. *Int J Nonprofit Volunt Sect Mark*. 2017:e1583. https://doi.org/10.1002/nvsm.1583