

The Influence of Healthy Lifestyle Attitude, Subjective Norm, and Perceived Behavioural Control on Healthy Lifestyle Behaviour among Married Individuals in Malaysia: Exploring the Mediating Role of Healthy Lifestyle Intention

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To Link this Article: <http://dx.doi.org/10.6007/IJARBSS/v13-i17/19834> DOI:10.6007/IJARBSS/v13-i17/19834

Published Date: 07 December 2023

Abstract

Healthy lifestyle behaviour is described as acts or behaviours that individuals participate in with the goal of encouraging and committing to a healthy lifestyle. There has been little study into healthy living activities among couples. The purpose of this study is to determine how healthy lifestyle attitude (HLA), subjective norm (SN), and perceived behavioural control (PBC) influence the adoption of a healthy lifestyle behaviour (HLB) among married Malaysians. Using self-administered questionnaires, the researchers collected data from 409 married individuals living in four states across Peninsular Malaysia. The researcher employed a multistage sampling technique. The results suggest that PBC ($\beta = 0.118$, $p < 0.05$) is substantially associated to HLB, validating Hypothesis 3a. Furthermore, the route coefficients suggest that HLA ($\beta = 0.160$, $p < 0.001$) is strongly associated to HLI, supporting Hypothesis 1b. The remaining two independent variables, SN ($\beta = 0.064$, $p < 0.05$) and PBC ($\beta = 0.72$, $p < 0.05$), are likewise strongly associated to HLI, confirming Hypotheses 2b and 3b. The substantial correlation between HLI and HLB ($\beta = 0.135$, $p < 0.001$) supports Hypothesis 4. This study's findings add to the current theoretical knowledge of the factors that impact the adoption of a healthy lifestyle among married people. Furthermore, they offer important insights into how these characteristics might influence healthy lifestyle practises.

Keywords: Healthy Lifestyle Behaviour, Healthy Lifestyle Attitude, Subjective Norm, Perceived Behavioural Control, Healthy Lifestyle Intention.

Introduction

Health is a multifaceted concept that is influenced by numerous factors. Increased health awareness leads to greater control over one's health, the abandonment of unhealthy behaviours, and the adoption of healthy lifestyle behaviours (Ikinci, 2018). All of the behaviours that an individual believes and practises in order to avoid illness and stay healthy are considered healthy lifestyle behaviours. Healthy lifestyle behaviours include balanced nutrition, regular exercise, stress management, and abstaining from smoking, alcohol, and other substances. Improving health enables people to learn how to restore and control their own health, as well as optimise their physical, mental, and social well-being, and it increases their levels of conscious decision-making. Individuals who adopt healthy lifestyle behaviours as a way of life achieve both long-term health and the ability to protect against illnesses and improve their health (Ikinci, 2018).

Adopting and maintaining healthy behaviours increases the likelihood of living a long and healthy life, whereas engaging in unhealthy behaviours has the opposite effect (NIH, 2022). Chronic diseases cause seven out of ten deaths in the United States, and many of them can be avoided by eating well, staying physically active, avoiding tobacco use and excessive drinking, and getting regular health screenings. However, simply knowing these facts is insufficient to motivate most people to make long-term behavioural changes (Chevance et al., 2023).

The most important step in preventing these diseases is to change one's lifestyle and to incorporate healthy lifestyle behaviours into one's daily life (Cihangiroğlu & Deveci, 2011). Individuals developing a healthy lifestyle awareness, improving their lifestyle, taking responsibility for protecting their health, and avoiding risky behaviours are said to accelerate the process of the emergence of health protective and improving activities (Ayaz et al., 2021). The importance of adopting healthy lifestyle behaviours that reduce the risk of contracting diseases, as well as the need for positive behavioural changes, has been highlighted in recent studies. Individuals, it is stated, are an important opportunity in terms of determining risky behaviours for health and planning efforts aimed at providing behavioural changes (Erol & Erdoğan, 2007).

In Malaysia, there is a growing emphasis on health-related issues in the media, as well as increased government spending on health campaigns (Fen & Hong, 2009). The government's initiative to improve public health has undoubtedly contributed to increased public awareness of the importance of a healthy lifestyle. One of the most important factors influencing individual health and wellness is lifestyle (Divine & Lepisto, 2005). A report by National Health Malaysia Survey 2019 (NHMS, 2019) stated that 1.7 million individuals in Malaysia currently live with all three major risk factors, which are diabetes, hypertension, and high cholesterol. One of the leading causes of death in Malaysia is cardiovascular disease. In Malaysia, 1 in 5 adults, or 3.9 million people over the age of 18, have diabetes. See Figure 1.

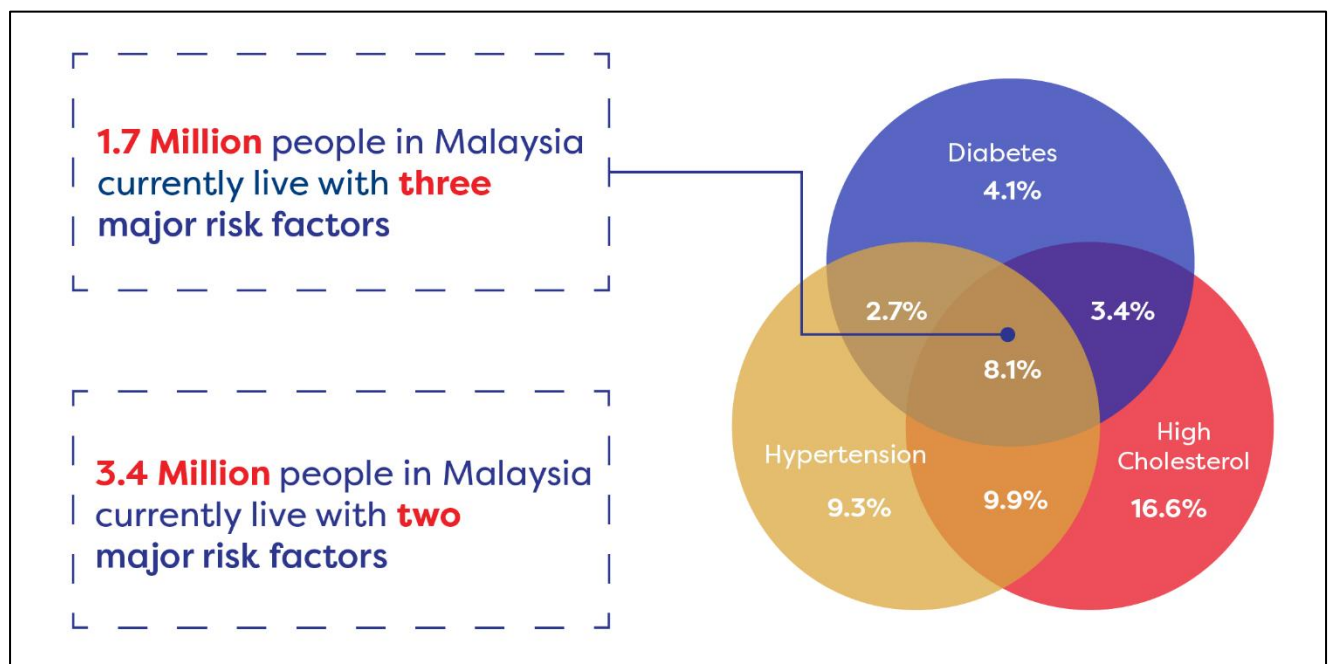


Figure 1: Statistic of Malaysians with Major Risk Factors for Diabetes, Hypertension & High Cholesterol. (Source: NHMS, 2019)

Healthy Lifestyle Behaviour among Married Individuals

Healthy lifestyle behaviours include behaviours such as health responsibility, physical exercise, nutrition, self-actualization, interpersonal interactions, and stress management (Çelebi et al., 2017). A healthy lifestyle leaves you fit, energetic and at reduced risk for disease, based on the choices you make about your daily habits. Good nutrition, daily exercise and adequate sleep are the foundations for continuing good health (Younis, 2014). For a longer and more comfortable life, put together your plan for a healthy lifestyle and live up to it.

Despite the importance of leading a healthy lifestyle, a large proportion of the adult population does not follow these health guidelines (WHO, 2009). A complex interplay of environmental, economic, social, and individual factors influences people's motivation to adopt a healthy lifestyle (WHO, 2010). Socio-demographic factors such as gender, age, education, and income are well-known determinants of healthy lifestyle behaviours at the individual level (WHO, 2010; Guerra et al., 2015). In contrast, the impact of relationship status on healthy lifestyle factors is far less well understood. Existing research (Vinther et al., 2016; Kamphuis et al., 2006; Laaksonen et al., 2003; Watt et al., 2014) has found that being in a committed relationship is associated with health-promoting behaviours. Couples, for example, tend to eat healthier, smoke less, and drink less alcohol than singles (Kamphuis et al., 2006; Laaksonen et al., 2003; Duncan et al., 2006). Marriage and cohabitation, on the other hand, have the potential to encourage unhealthy behaviours because couples frequently engage in activities such as eating, watching TV, and drinking alcohol together (O'donoghue et al., 2016; Meyler et al., 2007). Furthermore, evidence on the impact of relationship status on physical activity and body weight is inconclusive (Troost, Owen, Bauman et al., 2002). Some studies (King et al., 1998; Salmon et al., 2000; The & Gordon-Larsen, 2009) have found that couples have higher rates of physical inactivity and obesity.

Programs regarding to Malaysian Married Individuals

Healthy lifestyle is defined as a living practice which brings positive impact to the individual, the family and the community. Healthy lifestyle is needed in this challenging modern era because everyone suffers with major diseases and stress (Salimin et al., 2016). Here are many actions can be taken to achieve this goal. The failure to adopt a healthy lifestyle will result obesity problems in community. Obesity is rapidly becoming the leading cause of preventable death in Malaysia (Salimin et al., 2016). Diabetes and cardiovascular disease are increasing day by day due to this phenomenon (National Health and Morbidity, 2006).

Based on data from National Health and Morbidity Survey has demonstrated that at least 63% of adults age 18 years and above have at least one non communicable disease risk factors such as overweight, obesity, high blood pressure, high blood sugar or high blood cholesterol (Poh et al., 2010). Most of the people in the world, including Malaysia, adopt a sedentary lifestyle due to the rapid development and the increasing usage of equipment that limits the manpower and become a global health issue which affects more than 1.3 billion adults in developed and developing nations (Mandal & Mandal, 2012).

One of the factors that contribute to obesity is not living a healthy lifestyle especially in controlling one's diet and the absence of involvement in physical activities and job stress (Mohamad et al., 2015). Ministry of Health, Malaysia (2011), lack of physical activity contributes to an increase in body fat which eventually leads to obesity. The lack of physical activities can lower the lungs' performance and causes arterilleries to be clogged due to high level of cholesterol. Obesity is considered as an issue which affects one's health and appearance. Obesity directly linked to chronic diseases such as depression, high blood pressure, diabetes, breast cancer, osteoporosis, coronary heart disease, stroke, colon cancer and restlessness which require serious attention (World Health Organization, 2013). Sedentary lifestyles contribute many chronic diseases that cause the loss of productivity in the country. Hassan et al (2012), states that healthy communities can produce a viable country in terms of productivity and produce calm individuals physically, psychologically and mentally.

Theoretical Background and Hypothesis Testing

Theory of Planned Behaviour (TPB) is a theoretical model that has been commonly used by researchers to explain individual behaviour as resulting from intentions, which in turn are influenced by attitudes, subjective norms, and perceived behavioural control (Fen & Sabaruddin, 2008; Yap et al., 2013; Fen & Hong, 2009; Yusliza et al., 2022; Grandes, Sanchez, Cortada et al., 2008; Gormley & Melby, 2020). The concept of the Theory of Planned Behaviour was proposed by Ajzen (1985) which states that an individual's behaviour is influenced directly by behavioural intention and perceived behavioural control. The behavioural intention is shaped by the attitude, perceived behavioural control and subjective norms (Jing et al., 2019). Behaviour is a process driven by complex economic, psychological factors, and other decision-making processes. Attitude reflects the subject's expectation and evaluation of the results of a given behaviour. Subjective norms refer to the expectation and attitude of the significant other or group of people toward the subject. Perceived behaviour refers to the degree of control and the difficulty of performing a given behaviour. The basic the Theory of Planned Behaviour framework is mainly applied to study the impact of attitude, subjective norms, and perceived behavioural control on behavioural intention, on the basis of the fact that the subject makes conscious decisions and plans (Lihua, 2022).

Behavioural intention refers to the possibility of the subject to perform a given behaviour (Lihua, 2022). For instance, in the context of healthy lifestyle behaviour, behavioural intention refers to Individuals who embraced healthy lifestyle behaviours can withstand health risks linked to disability and disease in later life. The World Health Organization has emphasized that 60% of the quality of an individual's life depends on his or her behaviour and lifestyle (Tamanal & Kim, 2020). Theory of planned behaviour (TPB) comprises the causal relationship between attitude, subjective norms, perceived behavioural control, intention, and behaviour. According to theory of planned behaviour (TPB), attitude, subjective norms, perceived behavioural control, are the main factors in intention, which is explained by behaviour. In addition, TPB proposes that attitude, subjective norms and perceived behavioural control are affected by various external variables like motivations and existing sources. External variables are likely to affect behavioural intention by influencing beliefs (subjective norms and perceived behavioural control) and attitude, and then to affect actual behaviour.

Acknowledging this and the related literature, this study used the TPB variables; that is, the independent variables are healthy lifestyle attitude (HLA), subjective norms (SN), perceived behavioural control (PBC); the dependent variable is healthy lifestyle behaviour (HLB); and healthy lifestyle intention (HLI) acts as a mediator to explain the influence of the factors to the healthy lifestyle of married individuals and develop the hypotheses.

Healthy Lifestyle Attitude (HLA) and Healthy Lifestyle Behaviour (HLB)

Attitude is an individual's overall judgment and assessment of behaviour (Ajzen, 1991). This means that attitude towards behaviour can be reflected by the evaluation of behaviour together with its expected outcome. Individual attitude, an important component in human perception, influences individual behavioural intention. Thus, the intention to perform certain behaviour is contingent upon an individual's perceived attitude. Individuals tend to have intention to perform a particular action when attitude is formed based on the outcomes of evaluation. The World Health Organization (2012) defined the above determinants as well as many other factors that explain why people may or may not be healthy. Included in these are income and social status, education, physical environment, social support networks, genetics, health services, and gender.

A study by Borowiec et al (2012) found that person attitude will influence their behavioural intention to engage in a particular action, such practicing healthy lifestyle in his daily life. For instance, person who suffered on diabetes or high blood pressure may feel that they do not want to practice healthy lifestyle immediately since they still can prevent the disease from getting worse by rely on the medicine provided by the clinics or hospitals. However, if the disease getting worse, they may eat healthy food and do physical activity quickly so that they are able to stay healthy and maintain a good life. Hence, their spouse attitude will influence their intention to stay in a healthy lifestyle. Attitude has a positive and significant impact on intention to healthy lifestyle behaviour.

H1a: There is a positive relationship between healthy lifestyle attitude (HLA) and healthy lifestyle behaviour (HLB).

Healthy Lifestyle Attitude (HLA) and Healthy Lifestyle Intention (HLI)

According to the application study of the theory of planned behaviour in healthy lifestyle intention, the expected results of starting a healthy lifestyle behaviour will affect the attitude. As indicated earlier, perceived behavioral control and attitudes were the two strongest predictors of healthy lifestyle intention (Banerjee & Ho, 2020). The two positive associations were expected given the extensive evidence of their role in shaping health-related behaviors. However, that these two determinants had moderate positive relationship ($\beta = .32$ and $\beta = .20$ respectively) even when communication variables were controlled for is an interesting finding. It suggests that health marketers should enhance people's perceived behavioral control and attitudes to promote their willingness to lead a healthy life. Health authorities could persuade the public that a healthy lifestyle is not only good but also achievable. Personal anecdotes of how healthy behaviors are good and achievable should be included in health promotion and mass media messages. Health authorities should assist in reinterpreting possible inconveniences and difficulties in adopting a healthy lifestyle as minor challenges that can be easily mitigated.

H1b: There is a positive relationship between healthy lifestyle attitude (HLA) and healthy lifestyle intention (HLI).

Subjective Norms (SN) and Healthy Lifestyle Behaviour (HLB)

Subjective norms are an individual's perception of the social pressure to perform or not to perform the target behaviour (Ajzen, 1991; Francis et al., 2004). It can also be defined as the individual's perception of other people's views and thoughts on the suggested behaviour. These perceptions can play an influential role and put pressure on an individual to perform a particular behaviour, such as practice healthy lifestyle behaviour. This means that subjective norms of an individual depend on his or her perception about the thoughts of significant others (e.g. husband or wife, family members, friends, colleague, and the immediate supervisor) on their performed behaviour (Brouwer et al., 2009; Vermeulen et al., 2011).

Individuals tend to act and perform the recommended behaviour as expected by their spouse, family, friends and people around them. For instance, husband may buy fast food for dinner because his wife does not have time to cook healthy food because she has a lot of work to do. On the other hand, husband, who has thought about practicing healthy lifestyle, may have the intention to cook healthy food or buy healthy food for his wife for dinner. Therefore, subjective norms may have a bearing on individual's behavioural intention. Subjective norms have a positive and significant impact on intention to practice healthy lifestyle.

H2a: There is a positive relationship between subjective norms (SN) and healthy lifestyle behaviour (HLB).

Subjective Norms (SN) and Healthy Lifestyle Intention (HLI)

Ajzen analyzed the literature and found that the subjective norms aren't strong interpreters of intention (Ajzen, 1991). According to Banerjee and Ho (2020), among the three types of social norms, the association between injunctive norms and behavioral intention was statistically non-significant. A plausible explanation is that different social norms manifest uniquely in different contexts. In the health domain, the injunctive norms are perhaps disparate from their subjective norms and descriptive norms, which were significantly related to behavioral intention. It seems that even though the respondents are concerned about what

is commonly done in the society as well as what important others prefer them to do, they are indifferent to perceived social pressures related to attitudinal approval of behavior by families, peers, or the wider communities. Therefore, it is important for health authorities to convey to the public that most of the people commonly engage in healthy lifestyle, a behavior that is widely approved by important others. Besides, the study shows that individuals who engaged in higher levels of interpersonal communication indicated stronger intention to adopt healthy lifestyle, consistent with prior research.

H2b: There is a positive relationship between subjective norms (SN) and healthy lifestyle intention (HLI).

Perceived Behavioural Control (PBC) and Healthy Lifestyle Behaviour (HLB)

Perceived behavioural control is an individual's belief about his or her capabilities of exhibiting certain behaviours (Brouwer et al., 2009). Similarly, Francis et al (2004), asserts that perceived behavioural control can be conceptualised as people's ability to have control over their behaviour and their level of confidence in their ability to perform or not to perform. Therefore, an individual's belief will influence the individual's behavioural intention and stimulate him/her to perform the target behaviour. In this context, perceived behavioural control may exert an impact on employees' intention to return to work.

As noted earlier, people's behavioural intention is strongly influenced by their level of confidence in performing the actual behaviour. For example, if husband or wife feel tired or lazy to do exercise, he/she might get rest and skip the activity. However, if he or she is positive about having healthy lifestyle even though he or she feel tired or lazy, he or she might still do the exercise or physical activity in an effective and efficient manner.

H3a: There is a positive relationship between perceived behavioural control (PBC) and healthy lifestyle behaviour (HLB).

Perceived Behavioural Control (PBC) and Healthy Lifestyle Intention (HLI)

Specifically, perceived behavioral control emerged as the strongest predictor, followed by attitudes. Consistent with the TPB, attitudes, social norms and perceived behavioral control were positively related to healthy lifestyle behavioral intention among Singaporeans. Thus, the present study generally demonstrates the applicability of the TPB in predicting health-related behaviors in Asian countries despite some conflicting results in prior studies (Banerjee & Ho, 2020).

H3b: There is a positive relationship between perceived behavioural control (PBC) and healthy lifestyle intention (HLI).

Healthy Lifestyle Intention (HLI) and Healthy Lifestyle Behaviour (HLB)

The theory of planned behavior (TPB) (Ajzen, 1988; Ajzen, 1991) has often been used to explain behavioral intention. It posits that individuals' intention is shaped by their attitudes, social norms, and perceived behavioral control. Besides, healthy lifestyle intention in terms of healthy diet and physical activity in the social media are also known to dictate people's health awareness (Strømme et al., 2018). Hence, building on the TPB, this study investigates how the healthy lifestyle among married people – as well as the TPB components – attitudes,

social norms and perceived behavioral control – relate to healthy lifestyle intention in Malaysia.

A healthy diet helps protect against malnutrition in all its forms and is a foundation for health and development. It also helps to prevent noncommunicable diseases including diabetes, cardiovascular diseases, some cancers and other conditions linked to obesity. Together with a lack of physical activity, an unhealthy diet is one of the leading global risks to health (World Health Organization, 2022).

Evidence shows the benefits of a diet high in fruit, vegetables, legumes, nuts and grains, but lower in salt, free sugars and fats, particularly saturated and trans fats. Developing a healthy diet begins early in life with breastfeeding and educational initiatives for young children and parents. These benefits are reflected in higher educational outcomes, productivity and lifelong health.

H4: There is a positive relationship between healthy lifestyle intention (HLI) and healthy lifestyle behaviour (HLB).

Healthy Lifestyle Intention (HLI) as a Mediator

According to Ajzen (1991), the presence of behavioural intention can modify a conduct. The TPB describes how the influences on an individual impact that individual's decision to engage in a certain conduct. According to this view, intentions come before actions. Other variables, however, may interfere before the aim is accomplished. For example, a person may aim to go to the gym after work but is diverted by coworkers going to the bar instead, or he may become engrossed in a meeting, or he may become fatigued after a hard day at work and decides to go home instead. Many things can happen to prevent a behavioural intention from being achieved. Two aspects appear to be crucial in the link between an activity and the intention to carry out that behaviour. The amount of time that passes between the declaration of a behavioural intention and the actual behaviour. The greater the distance, the less probable it is that the goal will be articulated; the greater the gap, the greater the variety of other factors and diversions that may induce a shift in attitudes, priorities, and intentions.

H5a: Healthy lifestyle intention (HLI) fully mediates the effects of healthy lifestyle attitude (HLA) on healthy lifestyle behaviour (HLB).

H5b: Healthy lifestyle intention (HLI) fully mediates the effects of subjective norms (SN) on healthy lifestyle behaviour (HLB).

H5c: Healthy lifestyle intention (HLI) fully mediates the effects of perceived behavioural control (PBC) on healthy lifestyle behaviour (HLB).

Materials and Methods

A multistage sampling was adopted in this study. Samples of married people were selected from four states in peninsular Malaysia, namely, Selangor, Johor, Kelantan and Perak. The final sample included 409 married people (195 males and 241 females), resulting a response of about 100%. The majority sample (n=133) aged between 36 and 40 years. In terms of ethnic, the most respondents were Malay consisting of 70.2% (n=287). For the highest education level, most of the respondents were degree/master/Ph.D holders (60.4%, n=247). Their duration of marriage was between six to ten years consisting of 31.3% (n=128). 26.4%

of the sample had an income between RM3000 to RM4999. Finally, 37.7% of the sample had body mass index (BMI) between 18.5-24.9 which fall into 'Normal' category.

The instrument used in this study was self-administered questionnaires, which measured five constructs – HLA (6), SN (9), PBC (7), HLI (10) and HLB (56) – through five-point Likert scales, ranging from 1 representing “strongly disagree” to 5 representing “strongly agree”. In this study, questions regarding healthy lifestyle behaviour were obtained from previously validated items (Liu et al., 2021; Wu et al., 2009; Grønhoj et al., 2012) and modification was made suitable for study population if needed. Attitudes toward healthy lifestyle (HLA) were measured by asking respondents to rate on a 5-point Likert scale for six evaluative adjectives that describe healthy eating including harmful-beneficial, useful-useless, good-bad, enjoyable-unenjoyable, boring-interesting, and desirable-undesirable (Wu et al., 2009). The items in subjective norms (SN) assessed married individuals' external motivation or influence towards their strength on practicing healthy lifestyle behaviours for examples the encouragement from their families and spouse in applying healthy lifestyle behaviours in their daily lives; and the items of perceived behavioural control (PBC) assessed married individuals' perceive that they have control over healthy lifestyle behaviour.

In order to analyse the data, the study used descriptive and inferential statistics. For describing the five constructs, means and standard deviations were employed. The structural equation modelling (SEM) technique, which integrates individual constructs, the measurement model, and the structural model, was used to examine the direct and indirect relationship among constructs within TPB. The sample of 409 for this study met the requirement to use SEM, as a minimum of 200 is an appropriate sample for using the technique (Hoe, 2008).

Results

The descriptive statistics for the five latent constructs are presented in Table 1. The results show that for the respondents, on average, the influence of healthy lifestyle attitude towards healthy lifestyle behaviour is well above average ($M=4.649$, $SD= .548$), same goes to subjective norms ($M=4.193$, $SD= .708$) and the influence of perceived behavioural control ($M=4.031$, $SD= .671$) towards healthy lifestyle behaviour appears to be slightly higher. It was found that on average, respondents believed that healthy lifestyle intention ($M=4.167$, $SD= .686$) can influenced the healthy lifestyle behaviour. The results of this study confirmed that the awareness of practising healthy lifestyle behaviour was low, having a mean score of 3.46 ($SD= .541$) on a scale of 1 to 5.

A major requirement for SEM is to check for normality by using maximum likelihood estimation techniques (Byrne, 2010). Then, before testing the ten research hypotheses, a normality estimation was analysed to verify whether normality is met for the data collected or not. Regarding to criteria related to normality, data is considered to be normal if skewness is between -2 and +2 (Tabachnick & Fidell, 2007) and kurtosis is between -7 and +7 (Byrne, 2010). The results of the study showed that skewness ranged from -1.756 to +0.006 and kurtosis ranged from +0.711 to +3.339, in which all items were considered to be normal.

In order to test a measurement model for each construct through confirmatory factor analysis (CFA), the convergent and construct validity of each individual construct was examined. In addition, values of Cronbach's alpha (α) in the construct reliabilities were attained for the

latent constructs. As shown in Table 1, the Cronbach's alpha values for each scale range from 0.817 to 0.953, indicating excellent reliability for each individual construct, more than other TPB studies (e.g., Chan, et al., 2016; Alam & Sayuti, 2011). The average variance extracted (AVE) values, which ranged from 0.49 to 0.73, imply that all five constructs have great convergent validities (Hair et al., 2010). For discriminant validity purposes, the result found that the five constructs exhibit sufficient discriminant validity and a potential distinction between the constructs, since AVE for all the five constructs was higher than the squared coefficients (r^2) for each pair (Table 1).

Table 1

Descriptive statistics, construct reliability, AVE estimates, and squared correlation coefficients

Variables	Mean	SD	α	HLB	HLI	HLA	SN	PBC
HLB	3.456	.541	0.953	(0.50)				
HLI	4.167	.686	0.947	0.418	(0.71)			
HLA	4.649	.548	0.917	0.442	0.687	(0.73)		
SN	4.193	.708	0.911	0.494	0.522	0.619	(0.56)	
PBC	4.031	.671	0.817	0.47	0.71	0.603	0.546	(0.69)

Note: α = construct reliability values, AVE estimates are presented in parentheses, HLB= Healthy lifestyle behaviour, HLI= Healthy lifestyle intention, HLA= Healthy lifestyle attitude, SN= Subjective norms, PBC= Perceived behavioural control.

The SEM results of the measurement model indicate a good model fit ($\chi^2 = 856.771$, $\chi^2/df = 2.021$, AGFI = .741, GFI = .779, CFI = .887, RMSEA = .073, TLI = .876, IFI = .888, RMR = .056) with three indices (CFI, TLI and IFI) that go beyond the cutoff value of 0.80. It is considered very good if it is equal to or greater than 0.95, good between 0.9 and 0.95, suffering between 0.8 and 0.9 and bad if it is less than 0.8 (Portela, 2012). The results not less than 0.8. the RMSEA and RMR value decreases to between 0.03 and 0.08, which is the proposed range of adequate values (Hair et al., 2010). Since the model has displayed a good fit for the data in this study, the findings of hypothesis testing can now be considered with confidence. In comparison, the mediation model competes with the indirect model, in which all path coefficients from exogenous factors (HLA, SN and PBC) to HLB were constrained to zero; also the mediation model competes with the direct model, in which all path coefficients from HLI were constrained to zero. As displayed in Table 2, the mediation model takes a better fit to the data in comparison to the indirect and direct models, since the values of TLI, CFI, and IFI all exceed 0.80 and the value of RMSEA is less than 0.08.

Table 2

Model Fit Summary and Structural Model Comparisons

Model	χ^2	χ^2 / df	AGFI	GFI	CFI	RMSEA	TLI	IFI	AIC
FM	856.771	2.021	.741	.779	.887	.073	.876	.888	1000.771
DM	937.780	2.191	.728	.765	.867	.079	.856	.868	1073.780
IM	868.624	2.034	.739	.775	.885	.073	.875	.886	1006.624

Note: FM= Full Mediation Model, IM= Indirect Model, DM= Direct Model

Table 3 presents the path and parameter estimates related to direct, indirect and full mediation models. The findings show that the path coefficients in the direct model indicate that HLA ($\beta = 0.217$, $p < 0.500$) are not significantly related to HLB, thus not supporting Hypothesis 1a, same goes to SN ($\beta = 0.098$, $p < 0.237$) which not significantly relate to HLB, thus not supporting Hypothesis 2a while to satisfy the direct effect condition, PBC ($\beta = 0.118$, $p < 0.05$) are significantly related to HLB, thus supporting Hypothesis 3a. In addition, the path coefficients show that HLA ($\beta = 0.160$, $p < 0.001$) are significantly related to HLI, it shows that the result support Hypothesis 1b. The other two independent variables also are significantly related to HLI which are SN ($\beta = 0.064$, $p < 0.05$) and PBC ($\beta = 0.072$, $p < 0.05$), thus supporting Hypothesis 2b and Hypothesis 3b. Hypothesis 4 is supported as shown by the significant association between HLI and HLB ($\beta = 0.135$, $p < 0.001$). To address Hypotheses 5a, 5b and 5c, the causal stage method to test mediation was used. According to Baron and Kenny (1986), mediation happens when (1) the independent variable (IV) is significantly linked to the dependent variable (DV), (2) IV is significantly linked to the mediator, (3) the mediator is significantly linked to DV, and (4) the association between IV and DV decreases on adding the mediator to the model. The findings propose that a partial mediation is established, since the direct effects of PBC on HLB ($\beta = 0.113$, $p = 0.05$) reduce, but remain significant on the addition of HLI acting as the mediator in the model. Hence, Hypothesis 5c was supported. Finally, there is a lack of support for Hypothesis 5a and 5b, since the relationships between HLA on HLB and SN on HLB are not significant, which leads to the conclusion that mediation is not possible.

Table 3

Standardised Path Coefficients

Dependent Variables	Independent Variables	Total Effects (SE)	Direct Effect (SE)	Indirect Effect (SE)
HLI	HLA	.160***		.159***
HLI	SN	.064**		.064**
HLI	PBC	.072**		.072**
HLB	HLI	.135***		
HLB	HLA	.221	.217	
HLB	SN	.095	.098	
HLB	PBC	.113**	.118***	

Note: *** $p < 0.001$, ** $p < 0.05$, HLI= Healthy lifestyle intention; HLB= Healthy lifestyle behaviour; HLA= Healthy lifestyle attitude; SN= Subjective norm; PBC= Perceived behavioural control; R^2 (healthy lifestyle intention) = .317

HLA, SN and PBC jointly explained 31.7% ($R^2 = 0.317$) of the variance in HLI (Figure 2).

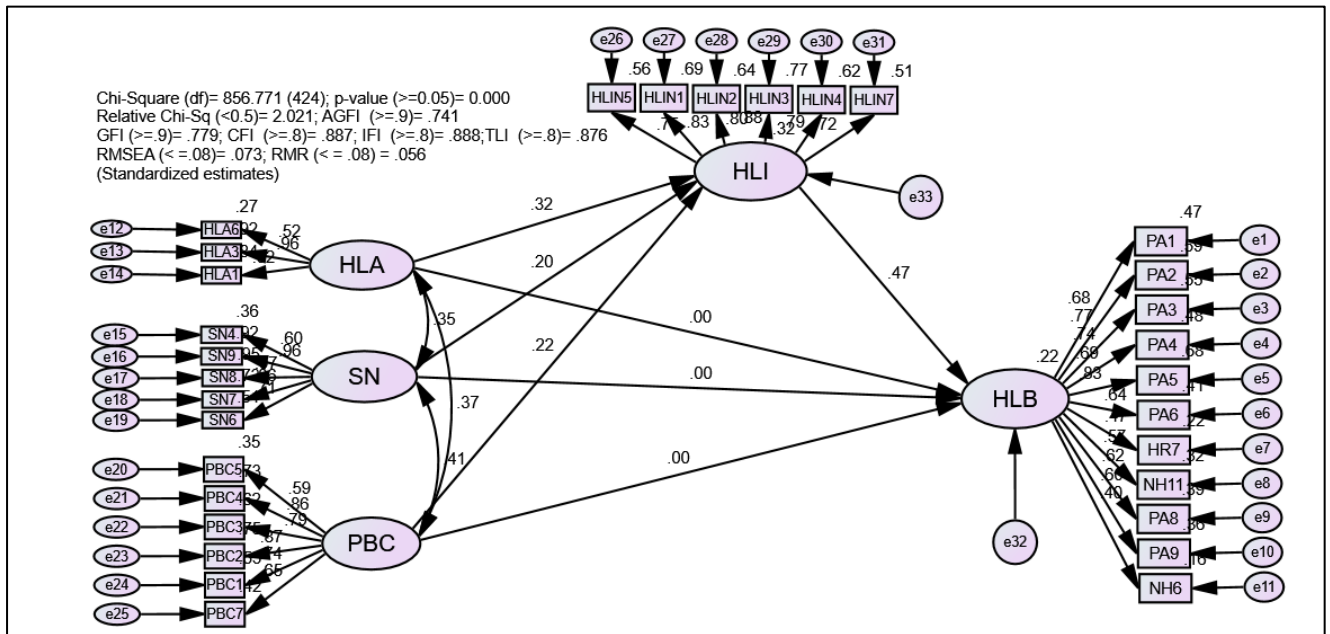


Figure 2: Estimated path coefficients of the mediation model.

Discussion and Implications

The present study sought to apply the theory of planned behaviour to the prediction of healthy lifestyle behaviour among a sample of Malaysian married individuals. The model was statistically significant, and the findings of this study illustrate the TPB's robustness in explaining healthy lifestyle intention. Other research has also employed the TPB as a theoretical framework to investigate behavioural intention (Shen & Shen, 2021). According to the findings of the study, healthy lifestyle attitude has a large and favourable influence on healthy lifestyle intention. Because individuals with strong positive attitudes seemed to have larger intents to adhere to healthy lifestyle activity, attitude is a key component in affecting behavioural intention in applying healthy lifestyle behaviour. In such a society, social pressure may compensate for strong favourable attitudes in developing intentions to practise healthy lifestyle behaviours. According to the findings of Karijin et al (2007), subjective norm was positively and substantially connected to intention. Other research, such as Kamariah and Muslim's (2007), have found subjective standards to be essential. In this study, subjective norms were not shown to be significantly connected to healthy intention or healthy lifestyle behaviours. People regarded themselves as autonomous and independent of the group in more individualistic cultures, such as Western cultures, and prioritised personal aims above communal ones, resulting in a greater use of personal attitude against societal standards in behavioural decisions. In collectivistic cultures, such as the Muslim culture, people regard themselves as interdependent with their community and aim for in-group rather than individualised objectives (Karijin et al., 2007).

Furthermore, based on the present findings, perceived behavioral control is not a critical predictor on behavioral. However, this finding, contrary to the findings by Bonne and Verbeke (2006), found that Muslims are more willing to put considerable effort in obtaining halal food Karijin et al (2007), which means perceived behavioral control is an important factor in influencing consumer to purchase halal food. The study also found that perceived behavioural control influences healthy lifestyle intention. The connection is positive, which suggests that the stronger influence of control in explaining behavioural variability is not rare. Summary

studies on several behavioural parameters conducted by Eagly and Chaiken (1993); Bonne and Verbeke (2006) yielded similar results. Ajzen (1991) proposed that control might influence behaviour directly by increasing effort towards goal accomplishment.

The results' implications The TPB model found to accurately predict healthy lifestyle intentions in Malaysian married people. Health specialists think that it is critical to minimise the death rate from noncommunicable illnesses, which are the leading cause of death globally and are mostly driven by an unhealthy lifestyle. The impact of socioeconomic disadvantage to moral risk is comparable to that of several lifestyle variables, such as physical inactivity and a poor diet. In comparison to other Asian countries, Malaysia has the highest rate of obesity, owing in part to Malaysians' eating habits. Obesity does not directly affect morbidity and mortality, but it does raise the risk of a variety of chronic illnesses such as diabetes, osteoarthritis, cancer, and major vascular disorders. Obesity is strongly linked to mortality from several chronic conditions.

The Ministry of Health Malaysia is responsible for monitoring the Implementation of all activities indicated in the National Plan of Action for Nutrition of Malaysia III (2016-2025) has called for a clear understanding of the definition of healthy living in order to promote healthy lifestyle behaviour among Malaysians. The National Plan of Action for Nutrition of Malaysia (NPANM) is the framework for action to address food and nutrition challenges in the country. It is the nation's blue print to promote optimal nutritional well-being of Malaysian through a series of strategies and activities.

Conclusion

This study develops and tests the theory of planned behaviour to capture the factors that may influence the married individuals to practice healthy lifestyle behaviour in their daily lives. When the definition of health is examined, it is seen that it is a multidimensional concept and is affected by many variables. Understanding that many diseases seen in individuals and communities and the impairment at the health level are related to lifestyles has led to change in lifestyles and the studies of health improvement to be accelerated (Özvarış et al., 2020). Health improvement activities vary depending on the conditions, changes seen in the society and global developments, and they are described as a dynamic process in this sense (Gungor et al., 2015; Yardım et al., 2009). Therefore, it is necessary to be careful in the process of preparation and implementation of plans and policies, all variables must be taken into consideration Yardım et al (2009), and health improvement activities must be evaluated with a holistic view (Kuru & Piyal, 2012). It is considered that taking adequate interest in health improvement activities provides not only contribution to the improvement of health level of individuals and society, but also to the decrease in a large expense item in the economies of countries, and that it will be possible to protect health and prevent diseases by this means. Therefore, each country must determine its own national targets and carry-on systematical studies to increase the quality of life, gain healthy lifestyle behaviors, improve, protect and sustain health. It is foreseen that the expected improvement in the health status of the society will be realized only by this means.

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