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Analysis of exercise behavior and health promotion behavior according to the Theory of Planned Behavior in Taiwanese older adults

Análisis de la conducta de ejercicio y de promoción de la salud según la Teoría del Comportamiento Planificado en adultos mayores taiwaneses

Chin-Cheng Yang[1,2], Wei-Yeng Sia[3], Tso-Yen Mao[1]*, Chih-Chien Shen[4], Ching-Lin Hsiao[1]

[1] Department of Leisure Services Management, Chaoyang University of Technology, Taichung, Taiwan (R.O.C.)

[2] Graduate School of Technological and Vocational Education, National Yunlin University of Science and Technology, Yunlin, Taiwan (R.O.C.)

[3] Department of Business Administration, Chaoyang University of Technology, Taichung, Taiwan (R.O.C.)

[4] Institute of Physical Education and Health, Yulin Normal University, Yulin, China (P.R.C.)

* Correspondence: Tso-Yen Mao; tymao.research@gmail.com

ABSTRACT

The purpose of this study was to analyze exercise behavior and health promotion behavior in Taiwanese older adults who regularly participated in exercise courses in an elderly community care center. This analysis was done according to the Theory of Planned Behavior. A survey was conducted on 100 older adults (more than 65 years old) of Central Taiwan. After eliminating the invalid questionnaires, 87 questionnaires were taken back successfully (valid response rate = 87%). Questionnaire data were analyzed by descriptive analysis, confirmatory factor analysis, and structural equation modeling. It was found that the ability to maintain exercise was the most important factor for engaging in health promotion activities. The participation in health exercise courses in a community care center can help older adults to maintain good physical health and can increase social interaction and participation in the community. Therefore, the community health exercise courses are an effective strategy to maintain the regular exercise behavior of older adults in Taiwan.

KEYWORDS

Community service center; Health promotion; Older adults; Theory of planned behavior

RESUMEN

El propósito de este estudio fue analizar la conducta de ejercicio y de promoción de la salud en adultos mayores taiwaneses que participaban regularmente en cursos de ejercicio en un centro comunitario de cuidado de ancianos. Este análisis se hizo según la Teoría del Comportamiento Planificado. Se realizó una encuesta a 100 adultos mayores (más de 65 años) de Taiwán central. Después de eliminar los cuestionarios no válidos, 87 cuestionarios se recuperaron con éxito (tasa de respuesta válida = 87%). Los datos del cuestionario se analizaron mediante análisis descriptivo, análisis factorial confirmatorio y modelos de ecuaciones estructurales. Se encontró que la capacidad para mantener el ejercicio fue el factor más importante para participar en actividades de promoción de la salud. La participación en cursos de ejercicios para la salud en un centro de atención comunitario puede ayudar a los adultos mayores a mantener una buena salud física y puede aumentar su interacción social y su participación en la comunidad. Por lo tanto, los cursos comunitarios de ejercicios para la salud son una estrategia eficaz para mantener el comportamiento de ejercicio regular de los adultos mayores en Taiwán.

PALABRAS CLAVE

Centro de servicios comunitarios; Promoción de la salud; Adultos mayores; Teoría del comportamiento planificado

1. INTRODUCTION

In 2018, Taiwan's elderly population (age more than 65 years) reached to 3.43 million and is expected to reach 7.15 million in 2050. Aging is a natural process which causes significant reduction in the muscle strength, balance, agility, attention, brain tissue, and function, which directly affects their quality of life. Health promotion has significant efficacy in clinical research and is considered to be one of the best ways to improve the daily activities of the elderly and level of their physical fitness. However, according to the Health Promotion Administration, Ministry of Health and Welfare (ROC), nearly 70% of the elderly over 65 years of age are not engaged in regular exercise activities. The medical expenses of the elderly are four times higher than other age groups (Health Promotion Administration, 2018).As a result, the Executive Yuan of Taiwan approved the "Six-Star Promotion Scheme for the Healthy Community of Taiwan". This program aims to develop community care services through social welfare and medical arrangements by setting a community care center. The goal of the community care center was to promote the physical and mental health of the elderly residents, (Bai, 2016).

In the past few decades, there has been great inclination towards the Research on human behavior models (Rerrklang, 2018). In the past, the study of human behavior was considered as one of the mature and stable theories of the Theory of Planned Behavior (TPB). The TPB was a set of theoretical models commonly used to explore and predict human behavior, which was according to the theory of rational behavior proposed by Fishbein and Ajzen (1977). TPB can make up for the fact that rational behavior theory cannot measure the limitation of individual behavior under complete control, which also was regarded as a more complete theoretical model (Fishbein & Ajzen, 1977).

According to a study conducted by Downs and Hausenblas (2005), the major concern in prescribing exercises in the elderly, were increased chances of injury, and other health related issues (Downs & Hausenblas, 2005). For the elderly, exercise is a high-risk intervention.

However, if they look at the post exercise benefit and physical and mental harms related to physical inactivity will automatically shift their focus towards exercising. (Alomran, 2019; Wang & Wang, 2019). Through the TPB, it is possible to explain why the elderly are engaged in regular physical activities in the community care center. The purpose of this study is to explore what kind of factors affect the good behaviors of the elderly to maintain their physical and mental health at optimum level. This study is an attempt to explore the reasons through the TPB, and use this research result as an important reference for the future public sector, central or local government, and community care center operators. The specific research purposes of this study are as follows: 1. Understand the current situation of attitudes, subjective norms, perceptual behavior control, and behavioral intentions of the elderly of the community care center. 2. To explore the influence of attitude, subjective norms, and perceptual behavior control on behavior intentions in the elderly of the community care center.

2. LITERATURE REVIEW

2.1. Elderly population

According to the statistics of Ministry of the Interior (2018), the total number of births in Taiwan in the year 2017 was 193,844, the lowest in the past seven years. At the end of the March 2018, the proportion of the elderly population over 65 years accounted for 14.05% of Taiwan's total population, that is, one out of every seven people was an elderly person (Ministry of Interior, 2018). In 1956, United Nations defined elderly as the people over 65 years old, which is also used by the World Health Organization (WHO) (World Health Organization, 2015). According to the Health and Welfare Department, the aged standard for the elderly is defined as 65 years of age or older. Taiwan has proposed the welfare of various elderly people over 65 years of age to safeguard the dignity of the

elderly and to promote their general health. In the past, Chinese literature on the elderly, the frequently used terms include old people, seniors, evergreens, the elderly, senior citizens, etc. Therefore, this study used the term elderly people over 65 years old as the term for all the elderly in this study.

2.2. Community care centers

The community care centers are set up by village offices and civil societies. They invite local volunteers for elderly care, tele consultation services, referral services, catering services, and promotion activities for general health of elderly. Localized community care provide a familiar and healthy environment to elderly for comfortable stay. Simultaneously, They also conduct regular health physical activities, caring visits, telephone calls for greeting, or catering services, to assist the elderly to live in the community, understand the living conditions of the elderly, and provide advice or referral services at any time (Cuyugan, et al., 2017).

2.3. Theory of planned behavior

The TPB evolved from the theory of reasoned action (TRA). According to TRA, an individual's behavior is controlled by the will of the individual. However, Ajzen, 1985, believes that TRA lacks the coordinating conditions and self-ability in considering behavior execution, because the actual behavior is often subject to the influence of many factors that cannot be controlled by the will, and the theory's explanatory power to human behavior is insufficient (Ajzen, 1985). In TRA, it is considered that behavioiur of an individual is controlled by his/her own will (Khunakorncharatphong & Tuntivivat, 2018), but in fact there are many non-controlled factors like time, money, information, and many other abilities which greatly affect an individual's behavioral intentions (Dana, & Ioan, 2019; Tsai, & Tsai, 2017; Satya, Yudistria, Asdar, & Munir, 2019). It has been observed that perceived behavior control represents the users' real control over behavior, thus Ajzen (1985) added perceived behavior control to TRA. perceived behavior control (PBC) on their behaviors is various internal and external considerations before the individual's intention are formed. TPB preserves TRA's attitude and subjective norm constructs and incorporates perceived behavior control to measure the extent to which individuals believe they can control their behaviors (Ajzen, 1985).

Many scholars have applied TPB to the study of the elderly. Stolte, Hopman-Rock, Aartsen, van Tilburg, and Chorus (2017) explored the physical changes of the elderly after participating in the health plan with TPB. The study found that behavioral intention can be well explained by TPB in the study of the elderly (R^2=.54-.60) and the overall model fit is very good (Stolte, Hopman-Rock, Aartsen, Van Tilburg, & Chorus, 2017). Kim, Reicks, and Sjoberg (2003) applied TPB to explain the willingness of

the elderly to use dairy products and consume dairy products, and found that attitude and perceived behavior control can effectively predict behavioral intention, while attitude is more influential than perceived behavior control (Kim, Reicks, & Sjoberg, 2003). Gretebeck, Black, Blue, Glickman, Huston, and Gretebeck (2007) found that attitudes, subjective norms, perceived behavior control, and physical activity intentions were significantly and positively correlated in their study of physical activity and physical function of the elderly over 65 years old. Attitudes, subjective norms, and perceived behavior control had good explanatory power for physical activity intention. Among them, perceived behavior control had the greatest influence on behavioral intention, followed by attitude, while subjective norms had the lowest influence (Gretebeck et al., 2007).

The Taiwan government has promoted the long-term care 2.0 since 2017. A large number of community care bases for the elderly have been established in the country, hoping to increase the proportion of the elderly who exercise regularly. According to the definition of regular exercise by the Executive Yuan of Taiwan, regular exercise is referred as exercising three times a week, 30 minutes each time, along with breathing and sweating. Therefore, this study intends to investigate the elderly who have continued to participate in healthy exercise courses in the community care center for more than six months and explore the key factors for the elderly to maintain regular exercise under the TPB model. The results of this study can be used as a reference for the government to continue to promote regular exercise for the elderly in the future. The objective of this study was to examine the key factors that influence elderly behavior intention to continue health promotion in the community care center.

H_1: Attitude has a significant impact on behavioral intention.

H_2: Subjective norm has a significant impact on behavioral intention.

H_3: Perceived behavior control has a significant impact on behavioral intention.

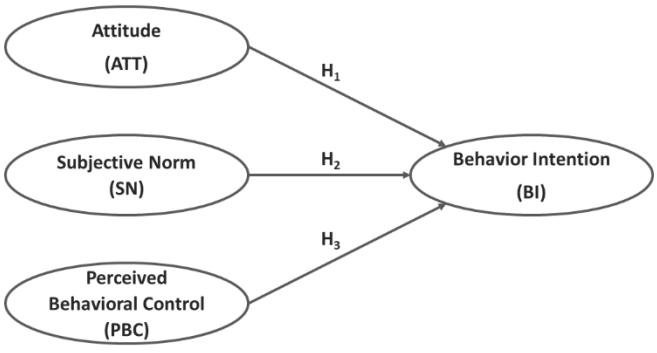

Figure 1. The Theory of Planned Behavior (TPB) framework

3. METHODS

3.1. Research participants and sampling method

In the present study, purposive sampling method has been used to survey the elderly participants of a community care center in Taichung, Taiwan. Recruitment criteria in the present study were: 1) Elderly participants who are over 65 years old and 2) willing to participate in community care exercise courses for more than 6 months. Failing to meet the aforementioned criteria, participants were excluded. For the eligible participants, the researcher conducted, one-to-one questionnaire survey to the elderly. According to previous studies, the minimums for sample size was from 3 to 20 times the number of variables and absolute ranges from 100 to over 1,000 for conducting factor analyses (Mundfrom, Shaw, & Ke, 2005). There are four variables of this study including attitude, subjective norm, perceived behavior control, and behavioral intention, and a total of 16 items. Therefore, it is estimated that the effective sample size of this study is at least 80 to 100. The formal questionnaire of this study was distributed from April 1, 2019, to April 30, 2019, and a total of 100 eligible participants were collected. After the invalid questionnaires and withdraw subjects were removed, a total of 87 copies were obtained, and the effective recovery rate was 87.00%.

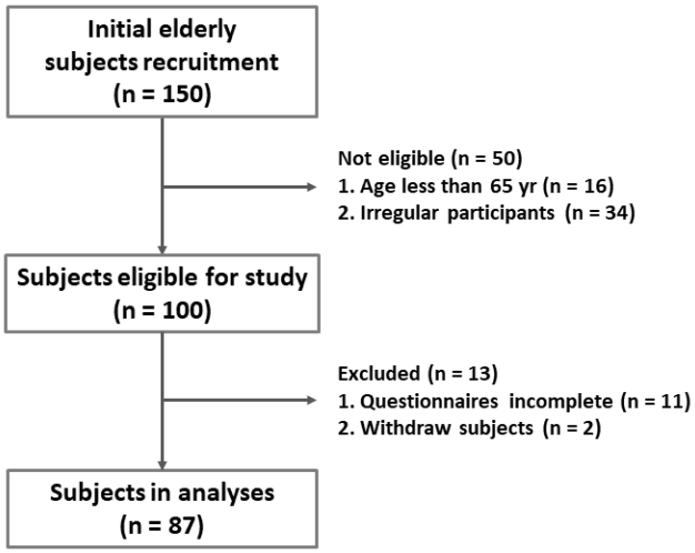

Figure 2. Flow chart of subject recruitment and selection

3.2. Research tools

The questionnaire for the present study is divided into five parts or subscales, which include basic personal data, attitude, subjective norm, perceived behavior control, and behavioral intention. The

attitude scale, the subjective norm scale, the perceived behavior control scale mainly referred to the measurement items of Ajzen (2002) and considered the measurement methods of Lin (2018) and Lin et al., (2017). The meaning of the items was modified according to the purpose of this study, and there were a total of 4 items (Ajzen, 2002; Lin, 2017, 2018). The behavioral intention scale of this study was mainly based on the measurement of Fishbein and Ajzen (1975) and considered the measurement methods of Lin (2018) and Lin (2017). The meaning of the items was modified according to the purpose of this study, and there were a total of 4 items (Lin, 2017, 2018).

Table 1. Questionnaire Constructs, Items and Sources

Factor	Code	Item	Sources
Attitude	ATT1	I think it is necessary to participate the healthy exercise course to community care center.	(Ajzen, 2002; Lin, 2017, 2018).
	ATT2	I think it is happy to participate the healthy exercise course to community care center.	
	ATT3	I think it is meaningful to participate the healthy exercise course to community care center.	
	ATT4	I think the health-promoting exercise course of community care center can improve my health.	
Subjective norm	SN1	I will follow my family's advice to participate healthy exercise course of the community care center.	(Ajzen, 2002; Lin, 2018).
	SN2	I will follow my neighbor's advice to participate healthy exercise course of the community care center.	
	SN3	I will follow my friend's advice to participate healthy exercise course of the community care center.	
	SN4	I will follow my medical staff to participate healthy exercise course of the community care center.	
Perceived behavior control	PBC1	It's not difficult for me to participate in health exercise classes of the community care center.	(Ajzen, 2002; Lin, 2018).
	PBC2	Whether to go to the community care center to participate in a health exercise course is my own decision.	
	PBC3	I have enough time to participate in healthy exercise courses of the community care center.	
	PBC4	I have enough physical fitness to participate in healthy exercise courses of the community care center.	
Behavioral intention	BI1	I will continue to participate in healthy exercise courses of the community care center.	(Lin, 2017, 2018).
	BI2	I will encourage others to participate in healthy exercise courses of the community care center.	
	BI3	I will ask for information about health exercise courses of the community care center on my own initiative.	
	BI4	In the future, if other community care center provided health exercise courses, I would like to participate.	

3.3. Data Analysis and Statistical Methods

In the present study, statistical analysis was done using SPSS 19.0 and structural equation modeling (SEM) by Smart PLS. Khoshmaram et al., (2020) mentioned that SEM is an important statistical method to investigate the relationship among variables. The analytical methods used in this

study included descriptive statistics, confirmatory factor analysis, and structural equation models. Statistical significance was $\alpha = 0.05$.

4. RESULTS

4.1. Population Distribution

Participants recruited for the present study were mainly females (64.0%), married (65.1%), living with spouses and children (38.4%), and their physical fitness was very good (39.5%) and could move freely (84.9%).

Table 2. Population Distribution of Elderly

Variables	Number	Percentage (%)
Gender		
Male	31	36.0
Female	55	64.0
Married status		
Unmarried	6	7.0
Married	56	65.1
Widowed	18	20.9
Divorce/Separation	6	7.0
Living situation		
Alone	8	9.3
Spouse	17	19.8
Children	23	26.7
Spouses and children	33	37.4
Friend	4	4.7
Others	1	1.2
Health status		
Very good	10	11.6
3Good	34	39.5
General	31	36.0
Not good	10	11.2
Very bad	1	1.6
Action ability		
Move freely	73	84.9
Mobility Aids	9	10.5
Wheelchair	2	2.3
Others	2	2.3

4.2. Confirmatory factor analysis

4.2.1. Discriminant validity

Discriminant validity is an important step in discriminating the effectiveness of research tools (Fornell & Larcker, 1981; C.-W. Lin, Mao, Huang, Sia, & Yang, 2020; C. W. Lin, Yang, Sia, & Tang, 2019)), which aims to verify that potential variables have discriminant validity from other potential variables and that each potential variable has the independence to measure different levels. If the cross-

loading and the square root of the average variance extracted (AVE), i.e. the correlation between each variable and other variables measuring the same construct is greater than the correlation coefficient between the construct and other constructs, the construct has sufficient discriminant validity (Chin, 1998, C.-W. Lin et al., 2020; C. W. Lin et al., 2019).

According to the results of Table 3, the $\sqrt{\text{AVE}}$ in this study was greater than the correlation coefficients of the remaining variables, indicating that the variables had good discriminant validity, so subsequent structural pattern verification can be performed (Table 3).

Table 3. Discriminant validity of all variables

Variables	AVE	ATT	SN	PBC	BI
ATT	.729	.854			
SN	.759	.799	.871		
PBC	.611	.656	.781	.782	
BI	.719	.730	.705	.657	.848

Note: The diagonal is $\sqrt{AVE}$, the non-diagonal is the correlation coefficient of each variable. $\sqrt{AVE}$ should be greater than the correlation coefficient of the remaining variables. AVE: average variance extracted. ATT: attitude. SN: subjective norm. PBC: perceived behavior control. BI: behavioral intention.

4.2.2. Convergent validity

Convergent validity is based on composite reliability (CR) and VE. The criterion of CR is .70 (Fornell & Larcker, 1981), and the standard of AVE is .50 (Bagozzi & Yi, 1988). The higher the CR of potential variables, the higher the correlation of the measurement variables, which means the internal consistency of the construct. As shown in Table 3, the CR of the measurement model was between .863 and .926, indicating that the research construct had good internal consistency. AVE means if the measurement item can explain 50% of the potential variables, the construct has sufficient convergence validity. The results show that the AVE of the study was between .611 to .759, which indicated that each potential variable had good convergence validity. For attitude, the factor load was .805~.872, CR was .915, and AVE was .729; for the subjective norm, the factor load was .827~.913, CR was .926, and AVE was .759; for perceived behavior control, the factor load was .752~.822, CR was .863, and AVE was .611; for behavioral intention, the factor load was .777~.881, CR was .911, and AVE was .719 (Table 4).

Table 4. Convergent Validity of All Variables

Variables	Original Sample	Standard Error	T-Statistics	CR	AVE
ATT1	.872	.044	20.068	.915	.729
ATT2	.805	.046	17.705		
ATT3	.869	.032	26.839		
ATT4	.867	.032	26.983		
SN1	.827	.047	17.513	.926	.759
SN2	.912	.019	48.215		
SN3	.913	.029	31.871		
SN4	.829	.048	17.335		
PBC1	.798	.043	18.384	.863	.611
PBC2	.752	.067	11.174		
PBC3	.822	.052	15.871		
PBC4	.753	.070	10.840		
BI1	.879	.033	26.359	.911	.719
BI2	.777	.064	12.237		
BI3	.852	.028	30.292		
BI4	.881	.036	24.551		

Note: ATT: attitude. SN: subjective norm. PBC: perceived behavior control. BI: behavioral intention. AVE: average variance extracted. CR: convergent validity.

4.3. Structural model analysis

In this study, PLS Algorithm and Bootstrap were used to repeatedly sample 2,000 samples as parameter estimates and inferences (Bollen & Stine, 1992). This study determined whether there was a significant causal relationship among various potential variables by the causality test for potential variables, and the value of t was used as a basis for judgment. Results mentioned in Table 5, indicated that the attitude positively affected the behavioral intention, with the t value of 2.872 ($p < .05$) and the estimated value was .281. Perceived behavior control positively affected behavioral intention, with the t value of 5.012 ($p < .05$), and an estimated value of .495. Subjective norm had a value of 1.280 for behavioral intention ($p > .05$).

Table 5. The Path Coefficient of Variables Analyzed by Structural Model Analysis

Variables	Original Sample	Sample Mean	Standard Error	T Statistics
ATT→ BI	.281	.275	.098	2.872*
SN→ BI	.155	.159	.121	1.280
PBC→ BI	.495	.500	.099	5.012*

*Note: ATT: attitude. SN: subjective norm. PBC: perceived behavior control. BI: behavioral intention. *p<.05.*

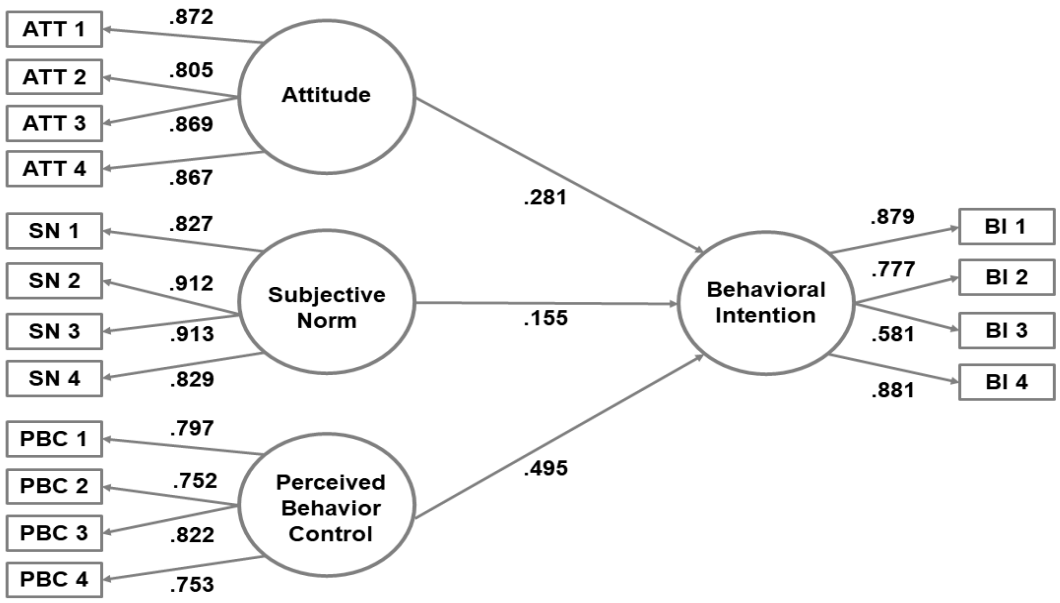

Figure 3. Path analysis of attitude, subjective norms, perceived behavior control, and behavioral intention. ATT: attitude. SN: subjective norm. PBC: perceived behavior control. BI: behavioral intention.

4.3.1. Goodness of fit index

The goodness of fit (GOF) is used in PLS-SEM as an index to measure the model fit. The purpose of the model fit index is to evaluate whether the theoretical model is sufficient to explain the data obtained from actual observations. The better the fit, the higher the usability of the model, and the more meaningful the estimation parameters. The GOF Measurement standard score of 0.1 is designated as weak fit, 0.25 as moderate fit and 0.36 as strong fit. As per the calculation, the goodness of fit of the current research model was .703 (Table 6), which was higher than 0.36, so the research model of this study had a high degree of fit.

Furthermore, Cronbach's was used to test the internal consistency and stability of the study scales. According to the suggestions on standards by Nunnally (1978) and DeVellis (1991), Cronbach's is acceptable if it is above .65, and it is better to be higher than .70 (DeVellis, 1991; Nunnally, 1978). Through the reliability test, the Cronbach's value of each variable in this study ranged from 0.788 to 0.893 (Table 6), indicating that the research scales had good reliability.

According to previous studies, R^2 is the degree of interpretation of endogenous variables by exogenous variables: 0.10 is low explanatory power, 0.30 is medium explanatory power and 0.50 is high explanatory power (Bollen & Stine, 1992; Shen, Yang, Lin, & Chang, 2019). The explanatory power of attitude, subjective norm, and perceived behavior control on the behavioral intention of this study was 70.1% (Table 6), that is, the independent variables of this model had a high explanatory power for the dependent variable.

Table 6. Goodness of Fit Index

Variables	AVE	Composite Reality	R^2	Cronbach's Alpha	Communality	Redundancy	GOF
ATT	.729	.915	.701	.876	.729	.000	.703
SN	.759	.926		.893	.759	.000	
PBC	.611	.863		.788	.611	.000	
BI	.719	.911		.870	.719	.235	
Total	.705		.701			.494	

Note: AVE: average variance extracted. ATT: attitude. SN: subjective norm. PBC: perceived behavior control. BI: behavioral intention. GOF: Goodness of fit.

4.3.2. Verification of Research Hypothesis

This section is mainly the verification of the research hypotheses, and further explores the results of this study. The research results are shown in Table 7.

Table 7. Verification of Research Hypotheses

Variables	Hypotheses	Correlation	Path Coefficient	*T value*	Results
H_1	ATT→ BI	Positive	.281	2.872	Support
H_2	SN→ BI	Positive	.155	1.280	Non-support
H_3	PBC→ BI	Positive	.495	5.012	Support

Note: AVE: average variance extracted. ATT: attitude. SN: subjective norm. PBC: perceived behavior control. BI: behavioral intention.

5. DISCUSSION

In the present study, female elderly residents constituted the population of study. Participants were married, elderly living with spouses and children, with good physical fitness, and could move freely. The main findings of the present study revealed that attitude had a significant positive impact on behavioral intention. The subjective norm had no significant positive impact on behavioral intention and perceived behavior control had a significant positive impact on behavioral intention.

Findings of the present study revealed that attitude had a significant positive impact on behavioral intention in regular health exercise courses' participants ($r = .281$, $p < .05$). Previous researches stated that evaluation of an individual's attitude is based on that person's likes or dislikes. Barone et al. (2019) also stated that the more positive an individual's attitude is the more that person is likely to have positive behavior. Attitude is one of the key factors affecting behavioral intentions of an individual, and it was found in this study that the elderly had a positive evaluation of participating in health exercise courses in the community care center (Fishbein & Ajzen, 1977; Gretebeck et al., 2007).

The subjective norm had no significant positive impact on behavioral intention in regular health exercise courses participates ($r = .155$, $p > .05$). Many studies have considered subjective norms to have a positive impact on behavioral intention. Han et al. (2017) stated that personal norm reflects individual

behavior in a specific situation. De Jong et al. (2019) applied TPB for the study and found that subjective norm had no significant influence on behavior intention. The research participants of this study were 65-year-elderly, who were mature enough to assess their abilities and determine their behavior. Therefore, the encouragement and support of family members, friends, etc. has a great impact, but they will not affect their behavior.

In this study, perceived behavior control had a significant positive impact on behavioral intention ($r = .495$, $p < .05$). According to Downs and Hausenblas (2005), the primary concern regarding doing physical exercises in the elderly, was increased chances of injury, and other health related issues. The perceived behavior control is the degree of ability in controlling one's behavior when engaged in health promotion (Downs & Hausenblas, 2005). Savari and Gharechaee (2020) found that perceived behavioral control and behavior intentions have a positive and significant correlation, while the more individuals have control over their perceived behavior, the more agreeable their intentions and behavior. The older adults believe that their ability to control themselves is the most important for engaging in health exercise courses. After all, exercise requires physical strength and physical movement to complete.

The population of the present study was constituted mainly by elderly females with an age higher than 65 years. The reason behind the low participation rate of male seniors is the lack of attractiveness in the content. Hence, the authors of the present study suggest to encourage elderly couples to attend together when designing a health exercise course. Moreover, the authors of the present study also suggest that that health exercise course can be designed based on motivation, physiology, psychology, age, and various aspects of the elderly. The elderly participants can be distinguished at different levels, which provides specific health exercise courses for different elderly populations.

6. CONCLUSIONS

This study used TPB to understand the behavior intention of health promotion in elderly who regularly participated in exercise courses of the community care center. Based on the findings of the current study, we conclude that the ability to maintain exercise is the most important factor for engaging in health promotion activities. Although subjective norm was not supported in this study, participation in health exercise courses of community care centers can help older adults to maintain good physical health and can increase their social interaction and participation in the community. Therefore, the community health exercise courses are an effective strategy to maintain the regular exercise behavior of the older adults in Taiwan.

7. LIMITATIONS AND FUTURE RESEARCH

The sample size of this study was relatively small. We aimed to understand the behavioral intentions of the elderly who regularly participate in healthy exercise courses. Therefore, we have strict restrictions on participants to ensure the quality of this study. We found that perceived behavior control had the greatest influence on behavior intention. Control beliefs generate perceived behavioral control, which refers to an assessment of the factors that may facilitate or impede the behavior (Abrahamse, 2019). In the present study, control belief was not included. Therefore, it is recommended that future studies include control beliefs, such as self-efficiency, to conduct the research model and to understand the factors influencing the elderly's perceived behavior control.

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The authors declare no conflict of interest.

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