

# THE RELATIONSHIP BETWEEN MOTIVES FOR PHYSICAL ACTIVITY PARTICIPATION AND PHYSICAL ACTIVITY LEVEL

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## ABSTRACT

*Many people involved in physical activities are able to maintain good health. The benefits of keeping physically active not only impact physical health but also psychological and physiological needs. However, physical activity amongst women has been found to be too low to achieve any health benefits. This paper is part of a larger study conducted to determine the demographic variables of women civil servants across different physical activity levels and seeks to examine the relationships between the motives of these women civil servants and their physical activity levels within The Transtheoretical Model (TTM). Self – administered questionnaires were collected from 40 women civil servants at Wilayah Persekutuan Putrajaya. The results revealed that seventy-nine percent of respondents' physical activity levels were classified into pre-contemplation, contemplation and preparation stages, indicating that the majority of women civil servants were not physically active. The results also showed that moderate relationships existed between the women civil servants' motives for physical activity participation and physical activity levels ( $r=.464$ ). It can be concluded that all motives derived would influence physical activity levels among these women, thus illustrating that the higher specific motives they gained, the higher physical activity levels they perceived. The findings also offer important insights for future research and government practice.*

**Field of Research:** Motives, Physical Activity Level, The Transtheoretical Model (TTM), Women Civil Servants

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## 1. Introduction

In recent years, chronic diseases have increased tremendously especially amongst women. This incidence is linked to unhealthy lifestyles such as tobacco consumption, imbalanced diets, and lack of exercises (Jamsiah, Iddris, Ezat, & Norfazilah, 2007; Tan & Yim, 2010). The World Health Organization (2010) reported that non-communicable diseases such as cardiovascular diseases, diabetes, and chronic respiratory diseases are growing and affecting developed and developing countries. This includes

Malaysia which was ranked first of obese countries in Asean (Kosmo, November 2011) and this issue is becoming a global burden issue (Mkamba & Mghamba, 2010). Besides, Brown and Robert (2010) identified physical inactivity as the fourth leading cause of death in 2003 in Australia.

Physical activity is widely recognized as a medium for keeping fit and healthy. Several benefits can be gained by frequently practicing moderate and vigorous physical activities frequently (Bees H. Marcus & Forsyth, 2003) such as reduced depression and anxiety (Biddle & Fuchs, 2009), reducing mortality rates (Jamsiah, et al., 2007; Sit, Kerr, & Wong, 2008), and also reducing obesity risk (Baba, Koketsu, Nagashima, & Inasaka, 2009; Han, Kim, Park, Kang, & Ryu, 2009; Morris, Bourne, Eldemire-Shearer, & McGrowder, 2010). Other than that, there are less than sixty percent of Malaysian adults were categorized in inactive groups (Jamsiah, et al., 2007; Mohd Zaid & Wilson., 2009) and contributed to the major health problems especially women (Tan & Yim, 2010; Wan Rabiah, Patterson, & Pegg, 2011). In past studies women were found to lead sedentary lifestyles and they did not engage in physical activity sufficiently to achieve positive health outcomes compared to men (Dixon, 2009; Hanlon, Morris, & Nabbs, 2010; Sit, et al., 2008; Weiss, Rubin, & Gomel, 2009).

There are so many motives that would influence the prevalence of physical activity such as physical motives, environmental motives and psychological motives (Sit, et al., 2008). In a study by Kahn et al., (2008), it was proven that psychosocial motives was also a trigger in engaging with physical activity. According to Jamsiah, et al., (2007), demographic profiles such as age and gender were also the factors to physical activity prevalence. Jamsiah, et al., (2007) stated that there were also differences in levels of activity among races in Malaysia. Besides, physical activity participation motives might be correlated with the physical activity levels among women civil servants.

In this study, the perception of physical activity levels from the element of the Transtheoretical model which is stages of change is reliable to describe the physical activity level among women civil servants. It was found that the lack of information on motives for physical activity participation for certain demographic profiles existed (Sit, et al., 2008) and it was necessary to substantiate a study in order to understand the reasons for these women civil servants to perform physical activities. Particularly, little research had been conducted to examine the relationships between motives for physical activity participation and physical activity levels among women civil servants.

Therefore, the aims of this paper were to determine the demographic variables across physical activity level and also to examine the relationships between motives for physical activity participation and physical activity levels among women civil servants of the supporting groups.

## **2. Literature Review**

### **2.1 Motives for Physical Activity Participation**

Motive is a fundamental force that causes an individual to behave in a particular manner (Lim, 2007). As a matter of fact, physical activities may lead to the psychological and physiological changes which occurred after exercise programmes (Dixon, 2009). Motives are varied and specific to individuals. Hence, its variations are also reflected by their demographic profiles. Motives are important to determine the physical activity participation. Other than that, motives to exercise would be enhancing according to the individual's objectives of being healthy. Various motives can be represented in individuals who engaged in a physical healthy lifestyle. The accessibility to recreational facilities, opportunities for physical activity, and aesthetic attributes were consistently related to the motives to exercise. Sit, et al., (2008), Biddle and Mutrie (2008), and Dixon (2009) reviewed and examined (a) behavioural determinants (e.g.,

fitness-health, enjoyment-interest, and competence); (b) environmental factors (e.g., availability and safety of exercise facilities); and (c) demographic characteristics (e.g., younger age and higher education) were the reasons people exercise regularly. These factors were also associated with the physical activity level among women.

Other than that, Seefeldt, Malina, and Clark, (2002) claimed that social support from family, peers and health providers also resulted in increasing involvement of physical activity. On the other hand, social support has a positive relationship with the physical activity as the more social support people receive, the more physical activity levels they will be involved. Adults may participate in physical activities by the influences of diverse range of personal, social, and environmental factors. According to Trost, Owen, Bauman, Sallis, and Brown (2002), six (6) classes of determinants of physical activity could be considered as individual variables such as socioeconomic status and perceived self-efficacy, which demonstrated the strongest and most consistent association with the behaviour.

Exercise motives are important determinants of the type and extent of exercise participation (Ingledeu & Sullivan, 2002). For example, the motives in the early stage of exercise are different from the motives in the later stage of exercise. In the study by Lim (2007), it was also stated that motives for every sports participation or any of physical activities are different according to their expected outcomes and it showed that all types of motivation were related to positive psychological outcomes.

## **2.2 The Transtheoretical Model**

The Transtheoretical Model (TTM) is quite extensive in intervention of physical activity research field (Biddle & Fuchs, 2009). It was developed by the Prochaska and DiClemente which facilitates intervention strategies that are both individually tailored and easily modified to fit diverse populations (Buckworth & Dishman, 2002). Other than that, this model was named as the Transtheoretical model because it was developed from many different psychological theories. According to Nigg et al., (2011) The Transtheoretical Model was developed as a comprehensive model of behavioural change, incorporating cognitive, behavioural, and temporal aspects into unified approach for behaviour change (Jordan, Nigg, Norman, Rossi, & Benisovich, 2002; Kennett, Worth, & Forbes, 2009). In addition, The Transtheoretical Model is also beneficial to some healthy programmes because of its applicability to interventions targeting multiple behaviours to increase public health. Besides, Gorely and Bruce (2000) stated the Transtheoretical Model is complete by the presence of ten (10) processes of change which reflect cognitive and behavioural strategies that can be used to help people modify their thoughts, environment and experience. It was an attempt to change their behaviour.

Previous researches claimed that there is a differential use in the process of behaviour change. For example, in the earlier stages, a person will use a cognitive process then use a behavioural process at the later stages. Kennett, et al., (2009) claimed the TTM proposes that individuals move towards certain stages in the behavioural change. The Transtheoretical Model incorporates four related concepts of behavioural change; (1) stage of change; (2) self-efficacy; (3) decisional balance; and processes of change (DeLong, 2006). All of these concepts might vary in importance of individual's moving from one stage to other stages. Though, the TTM suggests that the experiential processes are more important in the pre-action stages while behavioural processes are important during the action and maintenance stages (Kennett, et al., 2009). Therefore, this study only focused on the stages of change to describe the physical activity levels of respondents.

## 2.3 Stages of Change

Physical activity level in this study is form of stages of behavioural change of those people who are regularly engaged in physical activity. It consists of pre-contemplation, contemplation, preparation, action, and maintenance. The pre-contemplation, contemplation, and preparation were categorized as earlier stages of exercise whereas the action and maintenance were categorized as later stages of exercise. The physical activity level domain was one of four elements adopted from the Transtheoretical Model. The Transtheoretical Model (TTM) was developed by the Prochaska and DiClemente (1983) which facilitates intervention strategies that can be tailored individually and modified easily to fit the diverse populations. Other than that, this model is called the Transtheoretical model because it was developed from many different psychological theories. Stage of change reflects the temporal dimension in which attempts to change behaviours occur (Callaghan, Khalil, & Morres, 2010). People's levels of motivation to change are varied from each other which is from no intention to change to actually making behaviour changes (DeLong, 2006; Bees H. Marcus & Forsyth, 2003).

The stage of change construct characterizes the time or readiness dimension into five progressive stages according to behaviour change occurs (Nigg, et al., 2011). It is proposed that an individual's progression will go through five stages before they achieve a sustained change in behaviour. The stage of change was thought to be cyclical rather than linear as many individuals do not succeed in their efforts at starting and sticking with lifestyle changes (Bees H. Marcus & Forsyth, 2003). The five stages consist of pre-contemplation, contemplation, preparation, action and maintenance. These five stages are linked to different self-efficacy, decisional balance, and processes of change. The stage of change is also called as "stage of readiness to change" to describe the individual exercise behaviour (Rooney, Elfessi, & Gotro, 2004).

### Purpose of the study

The main purpose of this pilot study was to examine the relationship between motives for physical activity participation and physical activity level among women civil servants of a supporting group. This paper also aimed to identify the demographic variables of women civil servants. Based on the review of literature, 6 hypotheses were formulated:

H1 – There is no significant relationship between interest and enjoyment motives with physical activity level among women civil servants of a supporting group.

H2 – There is no significant relationship between competence-challenge motives and physical activity level among women civil servants of a supporting group.

H3 – There is no significant relationship between appearance motives and physical activity level among women civil servants of a supporting group.

H4 – There is no significant relationship between fitness motives and physical activity level among women civil servants of a supporting group.

H5 – There is no significant relationship between social motives and physical activity level among women civil servants of a supporting group.

H6 – There is no significant relationship between overall motives and physical activity levels among women civil servants.

## **Method**

### **Respondent**

40 respondents aged 18 – 58 years old volunteered to join this pilot study. Recent key statistics on Malaysian women civil servants showed that they would retire when they were 59 years old. The respondents completed a questionnaire which was distributed in two different government departments at Wilayah Persekutuan Putrajaya. Both departments were randomly selected from a list given by Perbadanan Putrajaya. The researchers sent a letter of invitation, a letter of application to conduct a research, a consent letter and also a set of questionnaire to each division head of these two departments. The questionnaires were collected by the researchers once completed.

### **Instruments**

A set of questionnaire which consisted of 2 sections was developed for this study. Section A was to gather the information on the motivation factors which were adopted and adapted from the Motivation of Physical Activity Measurement – Revised (MPAM-R) by Ryan, Frederick, Lepes, Rubio, and Sheldon (1997). This section comprised of 30 items that included 5 motives subscales (interest and enjoyment motives, competence – challenge motives, appearance motives, fitness motives and social motives) for each subscales with Cronbach's alpha ranging from .78 to .92 Ryan, et al., (1997). Respondents needed to identify their agreement or disagreement for each item with 5-point Likert Scales ranging from "Strongly Disagree" (1) to "Strongly Agree" (5). This instrument demonstrated a satisfactory reliability with Cronbach's alpha .916 for this study.

In section B, respondents were asked to respond based on the statements or questions regarding the physical activity level. These 5 statements were related to the stage of behaviour change that were adopted and adapted from the Stage of Change Measure – Physical Activity by B. H. Marcus, Selby, Niaura and Rossi (1992). For this section, respondents were asked to choose only one answer from 5 statements based on their current physical activity levels. In the present study, respondents were categorized into four stages which were pre-contemplation, contemplation, preparation, action and maintenance stages. Respondents who chose the first three stages were classified as inactive persons and respondents in the last two stages were categorized as active persons. The reliability of this instrument was found to be satisfactory ( $\kappa=.78$ ) for defining the self-reported physical activity levels (Sit, et al., 2008).

### **Procedure**

Once the approval from the faculty panel and institutional ethical committee had been obtained, the questionnaire was translated through back to back translation by four language experts. Then, the instrument was distributed to the respondents with similar criteria as the actual study for reliability tested. The set of questionnaire was distributed to respondents by the officer in-charge in the government agency once permission was obtained. Once the permission had been given, the researchers sent invitation letters to all the respondents and the division head of each organization. All respondents were required to attend a briefing session as to inform the purpose of the study and the

level of respondents' confidentiality in the present study. Informed consent was provided to ensure all of the respondents agreed to participate in the survey.

The assistance from their officer in the gathering was really helpful. The questionnaire was distributed during the working hours to get a higher returning rate. Aids from assistants were used to control the distribution of questionnaire to the subjects. The officer in-charge was responsible to collect all questionnaires and returned the questionnaire to the researchers.

### **Data Analysis**

In order to analyze and interpret the data, the Statistical Package for Social Science (SPSS) version 19.0 software was used. Two types of statistical analyses were used to analyze the data, namely descriptive and inferential statistics. Descriptive statistics was used to describe the characteristics of the sample. And it was also used to make some general observations and to explore the collected data in order to determine the frequency, means, standard deviation and ranking within the demographic variables of respondents across their physical activity level.

The Pearson product-moment correlation coefficient was appropriate to be used to describe whether the relationships between two continuous variables existed. If the relationships existed, the null hypotheses would be rejected which were to examine if there were any relationships between motives for physical activity and physical activity levels. The Cronbach's alpha coefficient was also used as an indicator of internal consistency to test the reliability of the questionnaire since the researcher added up a new domain in the instrument. The level of significance for all statistical analysis was set at 0.05  $\alpha$ .

### **Results**

#### **Demographic variables of the respondents according to their physical activity levels**

Frequency analysis was conducted to classify the demographic profiles of respondents. The result of the statistic is shown in Table 1. Of the 40 respondents, 30 respondents (75%) selected pre-contemplation, contemplation or preparation statements from SCM as to describe their current physical activity levels. Only 10 respondents (25%) indicated that they were in the action and maintenance stages. This result indicated only 25% respondents were considered active while the remaining 75% were considered as inactive respondents. This showed that out of 100%, there were 75% women were not active compared to those who were being active. Moreover, this also showed a significant disparity in the percentage among active respondents and non-active respondents. From the 6 respondents aged 18 to 20 years old, most of them claimed to be at the first three stages of physical activity level and 2 respondents were at the action and maintenance stage. Other than that, most of the 18 respondents aged 21 to 30 years old had been identified as inactive respondents (15) compared to the active respondents (3). The same went with 12 respondents aged 31 to 40 years which some of them were identified as inactive (8) and the other 4 respondents were not active.

Other than that, 12 out of 14 single women had been identified as inactive people with 2 respondents were active women. Besides, 17 respondents from 24 married women were not active compared to 7 married women in action and maintenance stages. While the number of people who were active and not active were the same for divorced and widowed respondents. Data of participants also showed that 27 from 35 Malay and Muslim respondents were not active; whereas there were only 8 respondents were identified as active people. There were 2 Chinese respondents who were at pre-contemplation and

preparation stages while there was only one respondent in action and maintenance stages. The same situation went to a Buddha respondent.

From the total of 12 respondents with diploma qualifications, there were 10 respondents in the first stages and 2 respondents in the later stages. 10 respondents had SPM and degree qualifications which for the SPM holders, there were 8 respondents who were in the first stages and 2 respondents in the later stages. Respondents with bachelor degree qualifications, there were 7 respondents in first stages and 3 respondents were classified in later stages. 4 out of 5 respondents with certificate qualifications were in the first stages and 1 respondent in the later stages. For respondents with STPM/HSC qualifications, there was only 1 in the first stages and 1 in the later stages. The data also revealed that the 10 respondents were at the first stages and 2 respondents at the later stages for respondents who gained less than RM1, 500 in their monthly salary. In addition, 9 from 14 respondents who gained their monthly salary from RM1,501 to RM2,500 were in the first stages though the other 5 respondents were at the later stages. 8 respondents who gained their monthly income of RM2,501 to RM3,500 were in the first stages and 2 respondents in later stages. There were 3 respondents in first stages and only 1 respondent in later stages recorded among respondents with monthly salary range from RM3,501 to RM4, 500. The distributions of age, marital status, race, religion, educational levels and monthly salary are presented in Table 1.

**Table 1:** Demographic data of respondents

<b>Variables</b>	<b>Total N</b>	<b>Pre- contemplation</b>	<b>Contemplation</b>	<b>Preparation</b>	<b>Action &amp; Maintenance</b>
<b>Age</b>					
18-20	6	0	3	1	2
21-30	18	6	5	4	3
31-40	12	2	3	3	4
41-50	4	1	0	2	1
<b>Marital Status</b>					
Single	14	4	5	3	2
Married	24	5	6	6	7
Divorced/Widowed	2	0	0	1	1
<b>Race</b>					
Malay	35	8	10	9	8
Chinese	3	1	0	1	1
Indian	2	0	1	0	1
<b>Religion</b>					
Muslim	35	8	10	9	8
Buddhist	3	1	0	1	1
Hindu	2	0	1	0	1

<b>Education Level</b>					
PMR/SRP/LCE	1	0	0	0	1
SPM	10	2	5	1	2
STPM/HSC	2	0	1	0	1
Certificate	5	0	1	3	1
Diploma	12	4	1	5	2
Bachelor degree	10	3	3	1	3
<b>Monthly Salary</b>					
<1,500	12	2	6	2	2
1,501-2,500	14	2	2	5	5
2,501-3,500	10	4	3	1	2
3,501-4,500	4	1	0	2	1
>4,501	0	0	0	0	0

To test the 6 hypotheses formulated in this study, a Pearson product–moment correlation test was conducted to examine if there were any significant relationships between all of the motives and physical activity levels. Table 3 showed the relationships between all motives and physical activity levels. It was found there was a positive relationship between overall motives and physical activity levels ( $r=.464$ ). The  $r$  value also indicated the moderate relationships also existed. Other than that, the analysis also reported that five motives for physical activity participation had a significant relationship with physical activity participation. Fitness motives had the highest score ( $r=.497$ ) followed by social motives ( $r=.468$ ), appearance motives ( $r=.383$ ), interest-enjoyment ( $r=.346$ ) and the lowest score was competence-challenge motives ( $r=.346$ ). All of the hypotheses were rejected since all factors had significant relationships with physical activity level. The findings are presented in Table 2.

**Table 2:** The relationships between motives and physical activity levels

Factors	Pearson Correlation	Sig. (2-tailed)
<b>Interest – enjoyment motives</b>	.365*	.021
<b>Competence – challenge motives</b>	.346*	.029
<b>Appearance motives</b>	.383*	.015
<b>Fitness motives</b>	.497**	.001
<b>Social motives</b>	.468**	.002
<b>Overall motives</b>	.464**	.003

\*\* . Correlation is significant at the level of 0.05 level (2-tailed)

## Discussion and Recommendations

This pilot study determined the demographic variables of women civil servants of a supporting group in government agencies across their physical activity levels. Other than that, this study also examined the relationships between motives for physical activity participation and physical activity levels. The findings of this pilot study found that 75% of the women civil servants of the supporting group were classified as inactive people and did not perform sufficient physical activity level to achieve desirable health outcomes. This finding also indicated that the percentage of active women civil servants who regularly participated in physical activities was very low. This finding was consistent with previous studies which reported that women were not being physically active (Jamsiah, et al., 2007; Mohd Zaid & Wilson., 2009;

Sit, et al., 2008). This situation might occur due to the low motivation among respondents to do physical activity.

The findings of this pilot study also revealed that there were significant relationships between all motives for physical activity participation and physical activity level among these women civil servants ( $p < 0.05$ ). The overall motives also showed a positive relationship which was considered to have a moderate relationship. This result was parallel with the previous study by DeLong (2006) which stated that the determination of doing a physical activity would discriminate the physical activity levels. It was proven that the relationship between motives for physical activity participation existed. For example, fitness motives might lead to higher physical activity level when these respondents were aware of the benefits of physical activity and desired to be healthier.

In addition, the findings also showed that fitness motives and stages of change had the highest correlation score compared to the other motives ( $r = .497$ ). The high correlation between fitness motives and stages of change may emerge as the significant predictor to physical activity participation. Other than that, social motives and stages of change had the second highest correlation among women civil servants after fitness motives ( $r = .468$ ). It was followed by appearance motives ( $r = .383$ ), and interest–enjoyment motives ( $r = .365$ ). It was found that competence–challenge motives had the lowest correlation with the stages of change ( $r = .346$ ).

The findings of this pilot study which can be used in the design and promotion of weekend programs could help government agencies to motivate women civil servants to be physically active. Additionally, the government can also use this data to provide physical activity programs and consequently increase job productivity among civil servants. These findings might facilitate health practitioners and health marketers to determine the specific factors that motivate these women to engage in physical activity. Moreover, the respective institutions should be able to provide vital knowledge resources to the public about physical activity. In sum, better approaches to physical activity programs may increase the number of effective participants. It is necessary to re – affirm the physical activity interventions and courses in various departments or institutions to increase employees' physical activity levels.

Future research with more sophisticated approach on motives should be producing better findings. As present study only highlighted the motives among women civil servant, the differences between both genders could also be reported. Additionally, the replication of this study can be done with a wider geographically area and involve the other groups of civil servant in Malaysia. Thus, this future research can be clarifying a better description on a physical activity pattern among women. The issues raised would be able to be addressed in future study because the more evidence is required to sustain and to developed the more effective programs for people.

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