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Differences in psychosocial determinants by gender and physical activity index among undergraduates

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DIFERENCIA EN LOS DETERMINANTES PSICOSOCIALES SEGÚN GÉNERO E ÍNDICE DE ACTIVIDAD FÍSICA EN ESTUDIANTES DE GRADO.

KEYWORDS: Motivation, exercise enjoyment, self efficacy, social support.

ABSTRACT: Majority of Malaysians do not meet the recommendation of adequate and regular physical activity, with about 61.4 % (aged 15 and above) considered inactive. This study examined the differences of psychosocial determinants of physical activity in undergraduates according to gender and physical activity index category. Self-efficacy Assessment, Social Support for Exercise, Motivation and Physical Activity Enjoyment Scales were used to measure the psychosocial determinants of physical activity. The Physical Activity Index (PAI) was determined by multiplying exercise intensity, duration and frequency. The total PAI score was categorized as 'Needs improvement' [NI], 'Fair' [F], 'Average' [A], 'Good' [G] and 'Excellent' [E]. A total of 359 undergraduates (male = 74.4%, female = 25.6%) were conveniently surveyed. Result in physical index category revealed that 25% of the undergraduates each was in the 'fair' and 'average' category. About 15% of the undergraduates needs improvement and 34.8% was in the 'good' and 'excellent' category. Inferential statistics analyses showed psychosocial determinants of 'self-efficacy', 'exercise enjoyment', 'motivation' and 'support from family' were significant according to gender. Males involved in physical activity due to 'self-efficacy', 'motivation' and 'enjoyment' while females were more influenced by family support. Significant results on PAI category and psychosocial determinants were shown in self-efficacy, social support from friends, motivation, and exercise enjoyment. For 'self-efficacy' and 'social support from friend' factors, the 'Need Improvement' group had low self-efficacy and low social support from friends. However, for the 'motivation' and 'exercise enjoyment' factors, the 'Needs Improvement' was more motivated and enjoyed exercise more than other groups.

Physical inactivity is a global issue and its health related implications of being inactive have make it an important area of study in both the developed and developing nations. Physical inactivity was responsible for 1.9 million deaths worldwide in 2008 (Katzmarzyk & Mason, 2009) and 3.2 million in 2014 (WHO, 2013). About 5.8 million (21% of total population) Malaysians suffer from hypertension compared to 4.2 million six years ago and 6.2 million hypercholesterolemia (Edwards & Lim, 2012).

Even though physical inactivity is a leading factor in mortality and morbidity (Cheah & Poh, 2014), majority of Malaysians do not meet the recommendation of adequate and regular physical activity (Poh et al., 2010). In addition, physical activity has been found to drop significantly between adolescence and adulthood, you adulthood has been found as a critical transitional period (Minkel, 2010) and monitoring youth's physical activity and understand their attitudes and knowledge of health benefits on physical activity level (Haase et al., 2004) should be our priority.

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The prevalence of physical inactivity among Malaysians aged 15 and above is male 57.3% and females 65.6% (WHO, 2013). Thus, it is imperative to examine the reasons why individuals especially youth, did not participate in physical activity. The purpose of this cross-sectional study was to examine the differences in psychosocial predictors (self-efficacy, social support, motivation, exercise enjoyment) of physical activity behavior in terms of gender and physical activity index category.

Method

Participants

A total of 359 apparently healthy undergraduates from four bachelor degree programs were conveniently surveyed (mean age = 20.4+1.5; male = 74.4%, female = 25.6%). In terms of physical activities participation, the most popular activities of the respondents were exercises activity (70.3%, n=253), individual sports (53.9%, n=194), and team sports (51.4%, n=185).

Procedure and measures

The subjects were informed about the nature and the benefits of the study prior to signing an informed consent. The survey procedure and the informed consent in this study were approved by the Research Ethics Committee of a Malaysian private University College in Kuala Lumpur.

The psychosocial determinants of physical activity inventory included Self-efficacy Assessment Scale (5 items, α = 0.8), Social Support for Exercise Scale (13 items; family support, α = 0.9, friend support α = 0.9), Motivation Scale (16 items, α = 0.7) and, Physical Activity Enjoyment Scale (18 items, α = 0.6). The Physical Activity Index (PAI) was determined by multiplying exercise intensity (minimal, light, moderate, heavy, very heavy), duration (<5 min, 5-14 min, 15-24, 25-34, 35 or >) and frequency (<1/month, 1-3 x/month, 1-2 x/week, 3-6 x/week, daily). The total PAI score was categorized as 'Needs improvement' [NI](<20 points), 'Fair' [F](20-39), 'Average' [A](40-59), 'Good' [G](60-99) and 'Excellent' [E](100 or >).

Descriptive statistics were computed for gender, age, physical activity, physical activity index and the psychosocial determinants of physical activity. The psychosocial determinants (Self-efficacy, Social Support for Exercise, Motivation, and Enjoyment) of physical activity were measured and analyzed using T-test and ANOVA.

Results

The results in Table 1 showed male undergraduates more active physically and performed well in four rating categories.

Results in Table 2 showed significant differences according to gender for psychosocial determinants of 'self-efficacy', 'exercise enjoyment', 'motivation' and 'support from family'. Male respondents were more confident (p=0.005), more motivated (p=0.027), and enjoyed physical activity (p=0.008) more than female students. In terms of support to do physical activity, female had more supports family (p=0.026).

Results obtained for the psychosocial determinants of physical activity for different PAI category for respondents using the one-way ANOVA showed that there were significant differences in 'self-efficacy, 'exercise enjoyment', 'motivation', and 'social support from friend' according to PAI category (p<0.01).

Discussion

Gender and the psychosocial determinants of physical activities

The findings of this study revealed that there were no significant difference (p=0.105) in 'support from friend' determinant but significant gender differences were found in 'self-efficacy', 'exercise enjoyment', 'situational motivation' and 'supports from family' according to gender (p<0.05). On the contrary, Shafer (2012) in a study of psychosocial determinants of physical activity of college students revealed that self-efficacy, total motivation and social support were not significantly correlated to physical activity for males. However, Rech et al., (2014) reported positive associations were observed between physical activity and self-efficacy, enjoyment, social support from family and friends.

This is consistent with the findings of Lee et al., (2010) that both psychological (self-efficacy and enjoyment in physical activity) and environmental factors (parental support) significantly and independently predict an additional 10% of the variance in physical activity and sports participation. However, in Malaysia, Wee et al. (2012) found in their study of college students that 75% of the respondents preferred friends as their partners to do physical activities.

The result on 'self-efficacy' of this study was supported by Spence (2010) who found that boys had significantly higher self-efficacy compared with girls, which resulted in significantly

more PA. Similarly, Pauline (2013) found male students had high levels self-efficacy compare to female students as male students were more confident in themselves.

The result on social support of this study revealed that females perceived higher support from family for their physical activity participation. Shafer (2012) concur and reported that social support was less of an important factor in explaining participation in physical activity for males. This is supported by Wee et al. (2012) that male students perceived lacked of social support more than female counterpart in physical activity participation.

This study found that males were more motivated to participate in physical activity and enjoy it more than females. This is supported by Vasíckova et al, (2014) who reported that males were more motivated than females when they have interest and enjoy performing physical activity. Similarly, competence motivated males more than females in physical activity participation. This is contrary to the findings of Wee et al. (2012) that males perceived the lacked of skill as reason not to participate in physical activity.

Many researchers (Booth et al., 2000; Salmon, 2003) reported enjoyment of physical activity to be a significant predictor of participation in physical activity in adults. In supporting this, Wankel (1985) reported that individuals who experience more exercise enjoyment do so because they experience greater "like" for the activity. Higher levels of self-efficacy and enjoyment may help to mitigate perceived barriers and increase the likelihood of engaging in physical activity (Bandura, 2004; Rech et al., 2014).

Physical Activity Index (PAI) and the psychosocial determinants of physical activities

This study revealed significant difference in psychosocial determinants of physical activity (self-efficacy, exercise enjoyment, motivation, supports from friend) according to PAI category. For self-efficacy, 'Excellent' [E] group had high self-efficacy score as compared to other groups and 'Need Improvement' [NI] group had low self-efficacy. In terms of exercise enjoyment, The NI group enjoyed physical activity more than other groups and the E group had the least enjoyment. Similarly, the NI group was more motivated as compared to other groups and the E group was least motivated. As for social support from friend, E group has greater support in physical activity participation and the NI group had the least support from friends.

For self-efficacy, the result of this study concur with Shafer (2012) that individuals with greater confidence were more physically active. NI scored low in self-efficacy and this is explained by Cerin et al. (2010) that individual perceived barriers to being physically active included lack of skills/knowledge.

On exercise enjoyment, NI group scored low in PAI but enjoyed physical activity more than other groups. This is supported by Wankel (1985) who proposed that individuals who experience more exercise enjoyment did so because they experienced greater "like" for the activity. This did not mean that they should exercise more. However, this is contrary to Shafer's (2012) findings that exercise enjoyment was significantly correlated to minutes of hard, minutes of very hard, and total minutes of physical activity. E group had the least enjoyment, this is contrary to the findings of Hagberg et al. (2009) that high exercise level might be influenced by enjoyment in doing physical activity. The low enjoyment score for the E group did not concur with the findings that enjoyment of physical activity to be a significant predictor of participation in walking, moderate activity, vigorous activity, and total physical activity in adults (Booth et al., 2000; et al., 2003). Similarly, this is also contrary to Wankel's (1985) suggestion that individuals were more motivated or inclined to participate in activities they enjoyed rather than activities they did not enjoy (Wankel, 1985). It seemed that the Excellent group despite scoring high in PAI, lacked motivation and enjoyment in physical activity participation.

In conclusion, the findings from this study provides some insights into the psychosocial determinants of physical activity among youth. These results can be useful for the health and fitness professionals when designing physical activity programme to enhance physical activity level among youth.

PAI Score	***Rating***	***Male***	***Female***	***Total***
		Freq. (%)	*Freq. (%)*	*Freq. (%)*
< 20	*Needs improvement*	*29 (8.1)*	*26 (7.2)*	*55(15.3)*
20-39	*Fair*	*70 (19.5)*	*23 (6.4)*	*93(25.9)*
40-59	*Average*	*64 (17.8)*	*22 (6.2)*	*86(24.0)*
60-99	*Good*	*90 (25.1)*	*21(5.8)*	*111(30.9)*
100 or >	*Excellent*	*13 (3.6)*	*1(0.3)*	*14(3.9)*
	Total	*266 (74.1)*	*93 (25.9)*	*359 (100.0)*

Note: PAI score = intensity score x duration score x frequency score

Table 1: Physical Activity Index Score and Rating of Respondents (n =359)

Psychosocial sub-scale	**Male**		**Female**				
	Mean	**SD**	**Mean**	**SD**	**df**	**t-value**	**p**
Self-efficacy	2.60	0.65	2.37	0.68	358	2.852	0.005*
Exercise enjoyment	89.28	16.55	84.04	15.27	358	2.676	0.008*
Situation Motivation	56.48	10.65	53.27	15.23	358	2.224	0.027*
Support from friend	38.33	10.09	36.41	9.02	358	1.627	0.105
Support from family	26.67	11.26	29.60	9.78	358	-2.231	0.026*

Table 2: T-test of mean differences in psychosocial determinants of physical activity scores of male and female.

DIFERENCIA EN LOS DETERMINANTES PSICOSOCIALES SEGÚN GÉNERO E ÍNDICE DE ACTIVIDAD FÍSICA EN ESTUDIANTES DE GRADO.

PALABRAS CLAVE: Motivación, disfrute del ejercicio, autoeficacia, soporte social.

RESUMEN: La mayoría de Malasios no cumplen las recomendaciones sobre una actividad física adecuada y regular, ya que 61.4% (edad ≥ 15 años) son considerados inactivos. Este estudio examinó las diferencias de los determinantes psicosociales de la actividad física en estudiantes de grado según su género y su categoría del nivel de actividad física. Para medir los determinantes de actividad física se aplicaron: Evaluación de la Auto-eficacia, Evaluación del Soporte Social al Ejercicio, Escalas de Motivación y de Disfrute de la Actividad Física. El índice de Actividad Física (IAF) fue determinado multiplicando la intensidad de ejercicio, su duración y frecuencia. La puntuación total del IAF fue categorizada como: 'Necesita Mejorar' [NM], 'Justo' [J], 'Medio' [M], 'Bueno' [B] y 'Excelente' [E]. Un total de 359 estudiantes por conveniencia (hombres = 74.4%, mujeres = 25.6%) fueron encuestados. Los resultados de las categorías del IAF mostraron que un 25% de los estudiantes se encontraba en la categoría 'justo' y 'medio'; un 15% de los estudiantes necesita mejorar y un 34.8% se encontraba en las categorías 'bueno' y 'excelente'. El análisis estadístico inferencial mostró que los determinantes psicosociales de 'auto-eficacia', 'disfrute del ejercicio', 'motivación' y 'soporte de la familia' eran significativos en relación al género. Los hombres se involucraban en actividad física debido a 'auto-eficacia', 'motivación' y 'disfrute' mientras que las mujeres estaban más influenciadas por el soporte familiar. Se obtuvieron resultados significativos en la categoría IFA y determinantes psicosociales tanto en auto-eficacia como en soporte de los amigos, motivación y disfrute del ejercicio. Para los factores 'auto-eficacia' y 'soporte social de los amigos', el grupo 'Necesita Mejorar' tenía una baja auto-eficacia y bajo soporte social de los amigos. Sin embargo, para los factores 'motivación' y 'disfrute del ejercicio', el grupo 'Necesita Mejorar' estaba más motivado y disfrutaba más del ejercicio que los otros grupos.

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