Malaysian Journal of Sport Science and Recreation
Vol. 21 . No. 2. 1-9, 2025.
DOI: https://doi.org/10.24191/mjssr.v21i2.7161

PRELIMINARY STUDY OF PHYSICAL ACTIVITY AND PHYSICAL ACTIVITY BEHAVIOUR AMONG UNDERGRADUATES OF A PRIVATE UNIVERSITY

***Wee Eng Hoe[1], Tarsame Singh Masa Singh[2] & Anita Christina Anthony Dass[3]**

[1]SEGi University/Faculty of Education, Languages, Psychology & Music,
weeenghoe@segi.edu.my, Malaysia

[2]SEGi University/Faculty of Education, Languages, Psychology & Music,
tersamemassingh@segi.edu.my, Malaysia

[3]SEGi University/Faculty of Education, Languages, Psychology & Music,
anitaanthony@segi.edu.my, Malaysia

*Corresponding author's email: weeenghoe@segi.edu.my

Published date: 15 September 2025

ABSTRACT

This study investigated the physical activity pattern and level among undergraduates. A total of 100 students (Male=29, Female=71) from a private university were conveniently chosen for this survey. Type of physical activity was measured by dichotomous items. Physical activity level (PAL) was measured using Physical Activity Index (Griffin, 2006). Results showed that most popular physical activity was exercise activities with females dominating in exercise activities, individual sport, team sport, outdoor leisure, and outdoor challenges as compared to males. In terms of PAL, majority of the participants was in the need improvement level (55%), with only 9% in the good and excellent level. Most participants have friends as their exercise partners, about 30% exercised with family members while about 46% preferred to exercise alone. Even though undergraduates of this study involved in a variety of physical activity, their physical activity level has left much to be desired.

Keywords: *Physical activity level, physical activity pattern, exercise commitment, exercise partner.*

INTRODUCTION

Current global estimates suggest that one in four adults and 81 per cent of adolescents do not engage in sufficient physical activity (Bull et al., 2020). WHO reported that physical activity is the fourth leading cause of death in the globe with an estimate of about approximately 6% of deaths globally (Sung et al., 2021) or 3.2 million death cases yearly (Zayed & Elshaer, 2022). Similarly, the Malaysian National Institute of Health [MNIH] (2020) revealed that a quarter of adult population was physically inactive. The physical inactivity situation is so serious that it has prompted the World Health Assembly (WHA) to

approve a new Global Action Plan on Physical Activity (GAPPA) 2018–2030 in 2018, and has adopted a global target to reduce global levels of physical inactivity in adults and adolescents by 15% by 2030 (Bull et al., 2020). Thus, it is important to examine physical activity and physical activity behaviour among undergraduates.

Wee et al. (2022) examined undergraduates' (n=358) physical activity and reported that most participants (70.3%) were involved in exercise activity, about 54% in individual sport, and 51% in team sport. In terms of genders, males were more dominant in all the three activities; 'exercise activities' (male: 74.6%, female: 25.4%), 'individual sports' (male: 82.4%, female: 17.6%), and 'team sports' (male: 84.9%, female:15.1%). Wee et al. (2021) examined PA of university students and reported their popular and unpopular PA. The most popular PA were body weight exercises, aerobic exercises, and low impact cardio workout while most unpopular PA were badminton, basketball and yoga.

According to previous research findings and the Social Ecological Model (SEM), PA participation behaviour is multifaceted and affected by many factors to varying degrees (Zhang, Thomas, & Weiller, 2015). Previous researchers (example: McLeroy et al., 1988; Wee et al., 2023) have reported that personal and social environmental factors contributed to behavioural changes in PA participation. Among numerous reasons for physical inactivity in adolescent include type of PA and social support (Wee et al., 2023). Even though social support could take several forms, including instrumental support, motivational support, and modelling support, the two most significant sources of social support originate from family and friends/peers. Previous research findings shows that encouragement (appraisal support) from parents, and companionship and tangible support (belonging support and instrumental support) from friends/peers were both influential and effective respectively (King et al., 2008). In terms of genders, the relationship between social environment and physical activity is more dominant with males (Amorim et al., 2010). However, Gruber (2008) revealed that female university undergraduates treasured companionship in PA participation and PA routine maintenance as compared to male counterparts. In spite of family support being persistently found to be positively associated to PA in adolescents, the findings on friend/peer social support for PA remained inconclusive (Dunton, Schneider & Cooper, 2007; Sallis, Prochaska & Taylor, 2000). Irrespective of above-mentioned evidences, consistent findings were revealed on the significant of friends and parents supports in encouraging PA participation (Abdelghaffar et al., 2019; Tesler et al, 2019; Wilk et al., 2018). In fact, lack of parental and friends supports have been reported as barriers to PA participation among adolescents (Abdelghaffar et al., 2019; Pawlowski, 2014).

METHODS

Participants

A total of 100 participants participated in this study. They were enrolled in a private university located at Kota Damansara, Selangor, Malaysia. The sample was dominated by females (male: 29.0%, female: 71.0%). In terms of age 38% was 20 years old and below, and 62% was above 20 years old (mean age = 21.4 +2.1 years).

Instrumentation

Type of physical activity was measured by dichotomous items based on five types of physical activities (exercise activities, outdoor challenges, outdoor leisure, individual sport and team sport).

Physical activity level (PAL) was measured using a 3-items Physical Activity Index [PAI](Griffin, 2006). The PAL was determined using the total score of PAI. The total PAI score was obtained by multiplying the intensity by duration and by frequency of exercise.

Procedure

Approval to conduct this research has been obtained from the University Ethical Committee. Questionnaires were distributed through the class representatives of every class to source for participants on campus. They were asked to answer the questionnaire from Section A (Demographic data), Section B (Type of physical activity involvement), Section C (Physical Activity Index), and Section D (Physical Activity Adherence Questionnaire) in sequence.

Data collection and analysis

Prior to data collection, all the participants were requested to fill-up the consent forms. The participants were briefed to ensure that they understood the study purposes and expected outcomes. They were made aware of voluntary participation, and they could withdraw from the survey at their convenience without providing any reasons and without fear of any repercussions. They were guaranteed confidentiality of the data collected and they were provided with contact of the researcher should they require further clarifications. Descriptive statistics such as frequency, percentages were used to report the demographic data of gender, age category, type of physical activity, and physical activity level (PAI category) was determined by multiplying intensity, duration, and frequency. PAL was rated as 'Excellent' (PAI score = 100 or more), 'Good; (PAI score = 60-99), 'Average' (PAI score = 40-59), 'Fair' (PAI score = 20-39), and 'Need improvement (PAI score = < 20).

RESULTS

Physical activity of the participants

Figure 1 shows the physical activities involvement of the participants. Almost 76% of the participants were involved in exercise activities, followed by individual sport (37%), and team sport (23%). When the five physical activities were scrutinized, females were found to be more involved in all the five physical activities; exercise activities (female: 71.2%, male: 28.8), outdoor challenges (female: 72.7%, male: 27.3%), outdoor leisure (female: 82.4%, male: 17.6%), individual sport (female: 73.0%, male: 27.0%) and team sport (female: 65.2%, male: 34.8%).

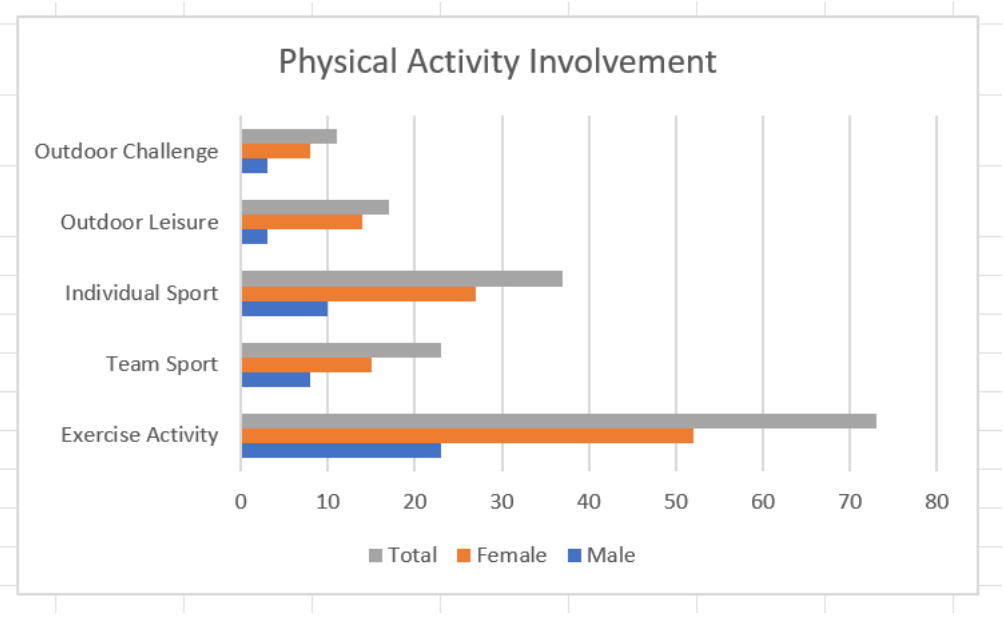

Figure 1: Physical activity involvement

Physical Activity Level of the participants

Overall results in Table 1 show that the participants had poor PAL with 55% in the need improvement category and only 8% in the good and excellent categories. In terms of gender, female had poor PAL in all categories except the excellent category as compared to PAL of the male counterpart. T-test based on PAI scores according to gender showed no significant difference in PAL ($t= -0.205$, $p>0.05$). This tells us that there is no statistically significant association between Gender and PAL; that is, both Males (mean = 25.07) and Females (mean = 26.24) performed equally well in PAL.

Table 1: Physical Activity Level for the Sample and According to Gender

Gender	Physical Activity Level Category (%)					
	Need improvement (<20)	Fair (20-39)	Average (40-59)	Good (60-99)	Excellent (100 or >)	Total (%)
Male	19.0	5.0	2.0	1.0	2.0	29.0
Female	36.0	22.0	7.0	4.0	2.0	71.0
Total	55.0	27.0	9.0	5.0	4.0	100

Physical Activity Level according to type of physical activity

Results in Table 2 revealed that more than half of the participants who participated in all the five types of physical activities had low PAL (Need improvement). Similarly, 30.4% (team sport) to 45.5% (outdoor challenge) of the participants had fair and average PAL. Less than 10% of the participants who participated in exercise activities (5.4%) and individual sport (8.1%) had good and excellent PAL. Participants in the outdoor challenge had the worst PAL, achieving only fair, and need improvement category.

Table 2: Physical activity level category according to type of physical activity

Type of PA	Physical Activity Level Category (%)					
	Need improvement (<20)	Fair (20-39)	Average (40-59)	Good (60-99)	Excellent (100 or >)	Total (%)
Exercise Activity	56.0	29.3	9.3	4.0	1.4	100
Team Sport	69.6	26.1	4.3	0.0	0.0	100
Individual Sport	51.4	35.1	5.4	5.4	2.7	100
Outdoor Leisure	58.8	35.3	5.9	0.0	0.0	100
Outdoor Challenge	54.5	45.5	0.0	0.0	0.0	100

Partner in physical activity participation

The sample as a whole (Figure 2) showed that majority of the participants preferred to exercise with friends (60.0%). Forty-six percent of the respondents exercise alone while 30% preferred family members as their exercise partners.

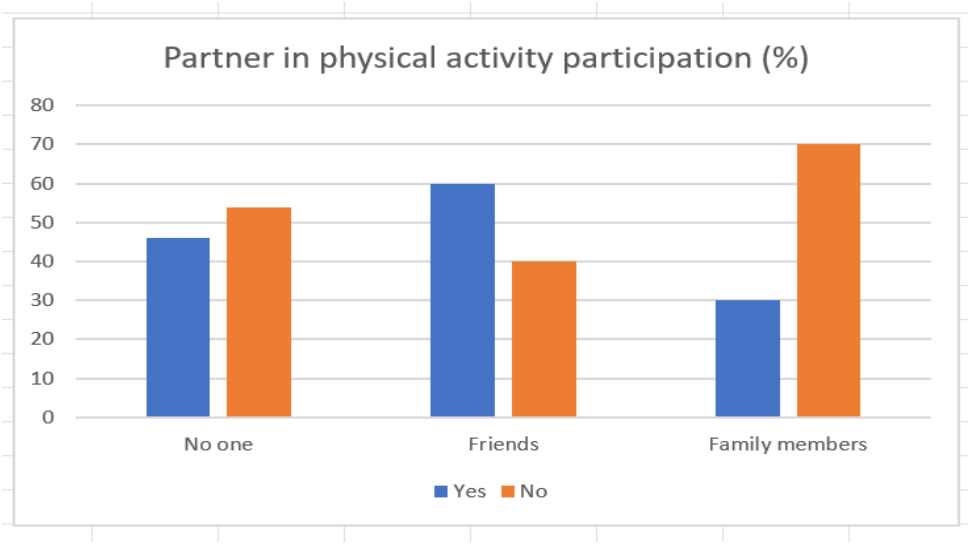

Figure 2: Partner in physical activity participation

In terms of gender (Figure 3), females preferred to exercise with friends (44%) as compared to exercising alone (30%) while male counterparts had similar preferences on friends as partner and exercising alone. Both genders, in descending order of preference, ranked exercising with friends, exercising alone, and exercising with family members as their exercise partners. This suggests that social interaction, even with friends, is highly valued in exercise, followed by solo exercise, and then family-based exercise.

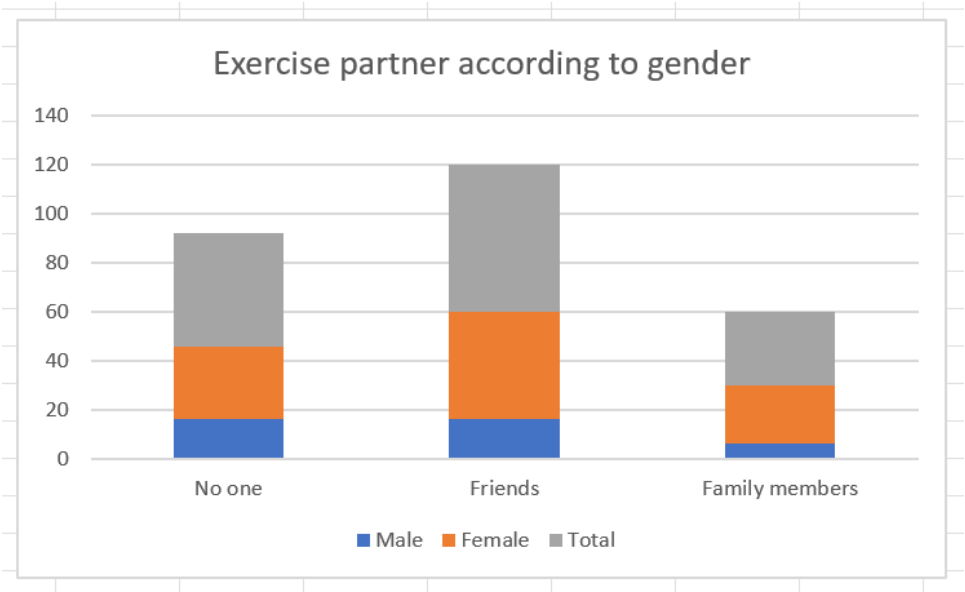

Figure 3: Exercise partner according to gender

Association between PAL and various category of partners

The data presented in Table 3 were based on dichotomous answer (yes or no). The percentages presented were computed based on the 'yes' responses. Results revealed that overall, the participants who exercised with family members performed better in terms of need improvement, average and good category. Even though the participants who exercised alone achieved 4.3% in the excellent category, almost 70% of other participants were placed in the need improvement category.

Table 3: Association between PAL and various category of partners

PAI Score	PAI Category	Exercise Partners (percent)		
		No one	Friends	Family Members
<20	Need improvement	69.6	55.0	46.7
20-39	Fair	15.2	31.6	30.0
40-59	Average	6.5	6.7	13.3
60-99	Good	4.3	6.7	10.0
100 or >	Excellent	4.3	0.0	0.0
	Total	100.0	100.0	100.0

DISCUSSION

Physical activity involvement of the participants.

The findings of this research revealed that undergraduates' main activity was exercise activity (76%) and a third of them participated in individual sport (37%). In terms of gender, as compared to the male counterparts, female undergraduates dominated in all the five physical activity. Female undergraduates were 5 times more involved in outdoor leisure, 3 times more involved in individual sport and outdoor challenge, and 2 times more involved in exercise activities and team sport.

The finding on exercise activity participation of this research was supported by Wee et al. (2022) who reported that 70.3% of undergraduates participated in exercise activity. Similarly, Wee et al. (2023) revealed that 74% of the participants were involved in exercise activities, followed by individual sport (37.4%). However, the finding of female dominance on all the five physical activities was contrary to male dominance in research conducted by Wee et al. (2022, 2023). Likewise, Wee and other researchers (2022) reported that males were dominant in team (male: 84.9%, female:15.1%). and individual sport (male: 82.4%, female: 17.6%), participation as compared to the findings of this research.

Physical Activity Level of the participants.

The findings of this study revealed that the sample as a whole had poor PAL with more than half in need improvement category and less than 10% in the good and excellent categories. Analysis of total PAL scores according to gender revealed that both genders accomplished similar PAL. This result is contrary to the findings found in Wee et al. (2023) where 20.5% of the participants achieved good and excellent PAL and only 13% was in the need improvement PAL. Similarly, the result of this study was contrary to a study by Wee et al. (2021) where it was reported that 20% and 18% were in the good PAL and need improvement PAL respectively. Earlier study by Elijah and Eric (2012) examined sport science undergraduates' physical activity and reported that 28% of them perceived their physical health status to be good and 20% perceived their health status to be in the poor category. However, Elijah and Eric (2012) support this study in terms of no gender differences in physical health status/PAL.

Partner in physical activity participation.

The participants of this research ranked PA partner preference as friends (60%), no partner (46%), and family members (30%) respectively. Both genders demonstrated similar preference for partner in PA participation. However, females were more dominance in all the three category of PA partner as compared to males. This supports the notion that females need partners to participate in PA (Gould et al., 1985; Hill, 1987; Ryckman & Hamel, 1992; Sapp & Haubenstricker, 1978).

In a study of university students' preference of partner in PA, Wee et al. (2023) support friends as the top ranked partner in PA. On the contrary, Wee et al. (2023) ranked family (27%) higher than no partner (13%). Similarly, males preferred to exercise alone more than the female counterparts. Numerous previous Malaysian studies (Azizah, 2004; Ruhaifie, 2008) also examined the influence of social support on PA

participation. While Ruhaifie (2008) supports friends as the top ranked exercise partner, Azizah (2004) support family as the utmost partner in exercise participation. In addition, Shafer (2012) in a study of psychosocial determinants of PA of college students revealed that social support and PA participation was not significantly correlated for male students but was significantly correlated for female students. Social support played a significant role in PA participation (Chau, 2007) and it was recognised that social connectedness consistently impacted majority of individuals who undertook sufficient weekly exercise (Brown & Nepal 2010).

CONCLUSION

This research has confirmed that PAL is a determinant for exercise behaviour. Social support especially friend support played a big role in PA participation. However, those participants who exercised with family members achieved better PAL. The participants that participated in exercise activities, and individual sport had good PAL. However, there is no significant difference in PAL according to gender.

AUTHORS' CONTRIBUTION

Conceptualization, W.E.H., T.S.M.S; data collection, A.C.A.D.; data analysis, W.E.H.; drafting of the manuscript and editing, W.E.H., T.S.M.S. All authors have read and approved this article to be published.

CONFLICT OF INTEREST

All authors declared no conflict of interest.

ACKNOWLEDGEMENTS

This research was funded by SEGi University Internal Grant. Authors would like to thank all the participants.

REFERENCES

Abdelghaffar, E.-A., Hicham, E.K., Siham, B., Samira, E.F., & Youness, E.A. (2019). Perspectives of adolescents, parents, and teachers on barriers and facilitators of physical activity among school-age adolescents: A qualitative analysis. *Environ. Health Prev. Med., 24*, 1–13.

Aggarwal, B.A.F., Liao, M.; & Mosca, L. (2008). Physical Activity as a Potential Mechanism Through Which Social Support May Reduce Cardiovascular Disease Risk. *Journal Cardiovascular Nursing*, *23*, 90-96.

Amorim, T. C., Azevedo, M. R., & Hallal, P. C. (2010). Physical activity levels according to physical and social environmental factors in a sample of adults living in South Brazil. *Journal of physical activity and health*, *7*(s2), S204-S212.

Azizah, S. (2004). *Constraints toward physical activities among UiTM Shah Alam Staff.* Unpublished Graduation Exercise, University of Technology MARA, Shah Alam, Selangor, Malaysia.

Brown, L. & Nepal, B. (2010). *Health lies in wealth, Health Inequalities in Australians of Working Age, CHA-NATSEM Report on Health Inequalities*, Report No. 1/2010, National Centre for Social and Economic Modelling (NATSEM), University of Canberra.

Bull, F.C., Al-Ansari, S.S., Biddle, S., Borodulin, K., Buman, M.P., Cardon, G., Carty, C., Chaput, J.P., Chastin, S., Chou, R., Dempsey, P.C., DiPietro, L., Ekelund, U., Firth, J., Friedenreich, C.M., Garcia, L.,Gichu, M., Jago, R., Katzmarzyk, P.T., Lambert, E., Leitzmann, M., Milton, K., Ortega, F.B. Ranasinghe, C., Stamatakis, E., Tiedemann, A., Troiano, R.P., van der Ploeg, H.P., Wari, V., Willumsen, J.F. (2020). World Health Organization 2020 guidelines on physical activity and sedentary behaviour. *Br J Sports Med., 54*(24),1451-1462. doi: 10.1136/bjsports-2020-102955.

Chen, S., Liu, S., & Yan, Z. (2006). Research on Mechanism of Exercise Persistence Based on Sport Commitment Theory. *China Sport Science, 26*, 48-55.

Dunton, G. F., Schneider, M., & Cooper, D. M. (2007). An investigation of psychosocial factors related to changes in physical activity and fitness among female adolescents. *Psychology and Health*, *22*(8), 929-944.

Elijah, G.R. & Eric, D.K.N. (2012). Motivational gender differences in sport and exercise participation among university sport science students. *Journal of Physical Education and Sport, 12*(2), 180-187.

Gould, D., Feltz, D., & Weiss, M. (1985). Motives for participating in competitive youth swimming. *International Journal of Sport Psychology, 16*(2), 126-140.

Gruber, K. J. (2008). Social Support for Exercise and Dietary Habits Among College Students. *Adolescence, 43*(171), 557-575.

Hills, L. (2007). Friendship, physicality, and physical education: An exploration of the social and embodied dynamics of girls' physical education experiences. *Sport, education and society*, *12*(3), 317-336.

King, A. K., Tergerson, J. L., & Wilson, B. R. (2008). Effect of social support on adolescents' perceptions of and engagement in physical activity. *Journal of Physical Activity, 5*, 374-384.

King, K.A., Vidourek, R.A., English, L., & Merianos, A.L. (2013). Vigorous physical activity among college students: Using the health belief model to assess involvement and social support. *Archives of Exercise in Health and Disease*, *4*, 267-279.

Kouvonen, A., De Vogli, R., Stafford, M., Shipley, M.J., Marmot, M., Cox, T., Vahtera, J. Vaananen, A., Heponiemi, T., Singh- Manoux, A., & Kivimaki, M. (2012) Social support and the likelihood of maintaining and improving levels of physical activity: The Whitehall II Study. *European Journal Public Health*, *22*, 514-518.

Malaysian National Institutes of Health (MNIH)(2020). National Health and Morbidity Survey 2019 (Non-communicable diseases, healthcare demand, and health literacy): Key Findings. Setia Alam, Selangor, Malaysia: Ministry of Health Malaysia. Retrieve from: http://iptk.moh.gov.my/images/technical_report/2020/4_Infographic_Booklet_NHMS_2019_-_English.pdf

McLeroy, K.R., Bibeau, D., Steckler, A., & Glanz, K. (1988). An Ecological Perspective on Health Promotion Programs. *Health Educ. Q, 15*, 351–377.

Pawlowski, C.S., Tjørnhøj-Thomsen, T., Schipperijn, J., & Troelsen, J. (2014). Barriers for recess physical activity: A gender specific qualitative focus group exploration. *BMC Public Health, 14*, 1–10.

Ryckman, R. M., & Hamel, J. (1992). Female adolescents' motives related to involvement in organized team sports. *International Journal of Sport Psychology, 23*(2), 147160

Ruhaifie Baba (2008). *Motives and constraints towards physical activity among workers with different profession.* Unpublished Graduation Exercise, University Teknologi MARA, Shah Alam, Selangor, Malaysia.

Tesler, R., Kolobov, T., Ng, K.W., Shapiro, E., Walsh, S.D., Shuval, K., &(2019). Harel-Fisch, Y. Ethnic Disparities in Physical Activity among Adolescents in Israel. *Am. J. Health Behav., 43*, 337–348.

Sapp, M., & Haubenstricker, J. (1978). *Motivation for Joining and Reasons for Not Continuing in Youth Sports Programs in Michigan.* Paper presented at the AAHPER National Convention, Kansas City.

Sallis, J. F., Prochaska, J. J., & Taylor, W. C. (2000). A review of correlates of physical activity of children and adolescents. *Medicine and science in sports and exercise*, *32*(5), 963-975.

Sung, H., Ferlay, J., Siegel, R. L., Laversanne, M., Soerjomataram, I., Jemal, A., & Bray, F. (2021). Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *Journal for clinicians, 71*(3), 209-249.

Wilk, P., Clark, A.F., Maltby, A., Smith, C., Tucker, P., & Gilliland, J.A. (2018). Examining individual, interpersonal, and environmental influences on children's physical activity levels. *SSM-Popul. Health, 4*, 76–85.

Wee, E.H., Cheng, W.F., Ler, H.Y., & Chin, N.S. (2022). Physical Activity and Exercise Enjoyment in a Sample of Metropolitan College Students. In B. Antala, J. L. A. Kaplánová, J. van Heel, D. Novak, X.S. Wang (Eds.), *Physical Education and Physical Activities of Children, Youth and Adults and Healthy Active Living* (pp. 103-118). Slovak Scientific Society for Physical Education and Sport.

Wee, E.H., Mak, H.A., Ler, H.Y., Cheng, W.F., & Chin, N.S. (2021). Impact of Covid-19 Lockdown on Physical Activities Behaviour and Anxiety among College Students. Physical Activity and Health Aspects of Covid-19 Pandemic. In D. Knjaz, D. Novak, & B. Antala (Eds.). Physical activity and health aspects of Covid-19 pandemic (pp. 65-82). University of Zagreb & FIEPS Europe.

World Health Organization [WHO] (2020). *WHO guidelines on physical activity and sedentary behaviour*. Retrieved from: file:///C:/Users/wee/Downloads/97892- 40015128-eng%20(1).pdf

Zhang, T., Thomas, K., & Weiller, K. (2015). Predicting Physical Activity in 10-12 Year Old Children: A Social Ecological Approach. *J. Teach. Phys. Educ., 34*, 517–536

Zayed, M. A., & Elshaer, I. A. (2022). Physical Activities and Learning Experience of Higher Education Students: Mediating Role of Quality of Life and Physical Self-Esteem. *International Journal of Environmental Research and Public Health, 19*(20), 13417.