Sport and well-being: Frequency of physical activity and life satisfaction

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Sport and well-being: Frequency of physical activity and life satisfaction

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ABSTRACT

Living a better and happy life (well-being) is a key point for people's daily life. Well-being integrates both of physical and psychological health namely feelings, emotions, and life satisfaction. This means that good life is when people are physically fit and they are satisfied with their life. There have been few studies investigating the relationship between physical activity and life satisfaction in Indonesia. Therefore, this quantitative study is aimed to examine the association between sport and well-being, especially the frequency of physical activity and life satisfaction. The data used are from the fifth wave of the Indonesian Family Life Survey (IFLS) 2014, with 31,669 participants from 15,160 households and 297 districts in Indonesia. Linear regression is used for data analysis, adjusting for control variables. The results show that the more frequent people exercise, the more they are satisfied with their lives, even after controlling for a set of confounding variables. Different measures need to be taken to increase physical activity as parts of people's daily life in order to protect their health and enjoy a better life.

Keywords: Physical activity; sport; well-being; life satisfaction

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INTRODUCTION

Well-being is a multi-dimensional phenomenon that integrates biological, psychological, social, and spiritual/religious dimensions (Wilt, Grubbs, Pargament, & Exline, 2016). For that, having well-being doesn't only mean to have better psychological health but also it needs to be physically fit (Baştuğ & Duman, 2010; Zayed, Ahmed, Van Niekerk, & Ho, 2018). It is also associated to the emotional and cognitive extents of the subjective experience resulting from the individual evaluation of several dimensions of life (Friedman & Kern, 2014), and it is a state of being comfortable, healthy, and happy (Friedman & Kern, 2014; Wilt et al., 2016). In sum, well-being is a larger concept which is much linked to happiness and how people are satisfied with their life as a whole. In other words, people's life satisfaction needs to be understood as having stability of both of physically and psychologically.

Physical activity has a positive contribution to human development from childhood to adulthood which enhance their body fitness (Giorgio, Kuvacic, Milic, & Padulo, 2018). People who are active in physical activity report to be more healthy (Mandic, Wilson, Clark-grill, & Neill, 2017), than those who are not. Physical activity is also known to enhance human memory and enhance its capacity to recall and to process the retained information. For example, Kim and Cardinal (2019)'s study found that student who are physically active report high academic performance rather than those who are less or those who do not. For that it is important to say that physical activity is not only good for human body fitness but also develop his cognitive capacity.

There is a closer relationship between physical activity and life satisfaction. For instance (Zayed et al., 2018), it examines the role of exercise behaviours on satisfaction with life, mental health, and body mass index (BMI). Findings show that people who are physically active experience more high level of mental health and they are more satisfied with their lives compared to people who are less active. Moreover, people with fit body mass index (BMI=20-25) experience high level of life satisfaction than those who are obese (BMI>25). They concluded that being physically active may lead to have a good mental health and experience satisfaction with life and being health in BMI have a great role to increase life satisfaction.

Physical activity also may have positive effects on both of body fitness and psychological health. There is a difference between people who do regular physical activity and those who do not, in terms of being physically fit and satisfied with life. Individuals who usually do exercises experience good health and they are highly satisfied with life (Baştuğ & Duman, 2010). In sum, doing frequent sport activity has a positive impact on both of physical and psychological health, this affect people's happiness positively, and they feel satisfied with their lives. The literature has provided possible explanations of the positive benefits of physical activity. Physiologically, physical activity allows the secretion of endorphins which provides feelings of calmness and positive mood (Basso & Suzuki, 2017). Researchers have also claimed that physical activity enhances the cognitive processes (Giorgio et al., 2018). Moreover, the synaptic transmission of amines is allowed during physical activity, which have antidepressant effects (Ransford, 1982). At the psychological level, doing physical activity is believed to enhance a sense of mastery and self-efficacy because of the challenges encountered (North, McCullagh, & Tran, 1990). At the psychosocial level, the quality of social relationships are increased when people who engage in physical activity have opportunities to interact with their peers (Smith, Keating, Eime, Sullivan, & Uffelen, 2017). Despite the number of studies overall, there have been few that investigate the association of physical activity with life satisfaction in Indonesia. Therefore, this study aims to close this gap by investigating this issue in Indonesia using data from the Indonesian Family Life Survey.

METHOD

In this study, data are from the fifth wave of the Indonesian Family Life Survey (IFLS) which took place in 2014-2015. IFLS is a longitudinal socio-economic and health survey that represents about 80% of the Indonesian population and it is conducted by Rand Corporation (California, US) in collaboration with the survey METER (Yogyakarta, Indonesia) (Strauss, Witoelar, & Sikoki, 2016). The survey collected information at the individual, family, household, and community levels. The survey used multistage stratified sampling to collect data on the individual level, household level, and the community level. When the survey was first conducted in 1993, it was based on households from 321 enumeration areas (EAs) from 13 provinces of Indonesia. Twenty households were randomly selected from each urban EA, and 30 households were selected from each rural EA.

The IFLS (2014) 5th wave used 50.148 people from thirteen provinces of Indonesia, recruited from 16, 204 households. The data were collected with self-reported questionnaires and face to face interviews, and the participation rate was 92% (Strauss et al., 2016). The frequency of physical activity serves as independent variable. The IFLS survey asks respondents to think about the time they spent walking in the last 7 days. This included at work and at home, walking to travel from place to place, and any other walk that they might do solely for recreation, sport, exercise, or leisure. The survey asked they if that is for at least 10 min continuously (Strauss et al., 2016). The survey asked a subsequent question to participants who

responded yes to this question: during the 7 days, how many days did you do that exercise?, answers ranged between 1 to 7. High scores indicated high frequency of physical activity. The mean score was 5.01 (SD=2.37, range= 1-7).

A single item question is used to measure life satisfaction. In IFLS survey, participants are required to respond to the question about "how they are satisfied with life as a whole?". Life satisfaction was measured in a Likert scale from 1= "not at all satisfied" to 5= "completely satisfied" (Diener et al., 1985). The average score for life satisfaction is M=3.32, SD=0.79; range=1-5.

Additional to those two main variables, this study also adds other covariates as gender, marital status, age, educational level, smoking behaviours, religiosity, personality traits, and social trust. The aim is to investigate their correlation with frequency of physical activities and life satisfaction. Therefore, the intention is to control them as the potential confounders of the relationship between frequency of physical activity and life satisfaction.

Gender affects people's life satisfaction depends on their personality traits. For instance, studies have reported that females have higher levels of well-being than males globally (Graham & Soumya, 2012), and conscientious females experience high level of life satisfaction after they are married, it is also introverted women and extroverted men experience longer life satisfaction after they get married (Boyce, Wood, & Ferguson, 2016). Moreover, there might be gender differences in physical activity (Nopiyanto, Raibowo, & Prabowo, 2021). Gender is coded with dummy variable (0) for female and (1) for male. The percentage for gender is 47% for males and 53% for females. Age is a significant predictor of life satisfaction (Stone, Schwartz, Broderick, & Deaton, 2010), the average score for age, M=38.64 (SD= 1.07, range=1-4). Marital status has effects on people's life satisfaction, where for instance married people report high level of life satisfaction than unmarried (Greenstein, 2016). In this analysis it is coded (1) for married and (0) for unmarried (single, widowed and divorced), and its percentage are 78% for married and 22% for unmarried. Educational level have an effect on life satisfaction (Kuroki, 2011). Education is coded respectively; (1) for kindergarten, (2) for elementary school and equivalents, (3) for junior high school and equivalents, (4) for senior high school and equivalents, and (5) for high education. Their percentage are respectively 37% for primary school, 23.5% for junior high school, 34.5 % for senior high school, and 5% for high education.

Smoking is associated with low levels of life satisfaction (Churchill & Farrell, 2017). A dummy variable (1) is entered for participants who answered yes and (0) for those who answer no. The 95, 7% report that they smoke while 4.3% do not. Social trust increases the level of life satisfaction and it influences life satisfaction through variables associations as respect and social supports (Sujarwoto, Tampubolon, & Pierewan, 2017), the average score for social trust, M=2.28 (SD= 1.07, range=1-4). Religiosity has effects on people's life satisfaction (Sujarwoto et al., 2017). Religious people are given dummy code (1) and (0) for not religious, and 72% of respondents reported to be religious.

The relationship between personality and satisfaction with life is indisputable. For example personality traits predict the increases and the decreases in life satisfaction (Anusic, Yap, & Lucas, 2014). Extroverted people are satisfied whereas neurotic people are less satisfied (Veenhoven, 2016). For example extroverted people are less depressed, satisfied, and express their gratefulness more than neurotic ones (Lyubomirsky & Layous, 2013). The average scores for extroversion are 7.18 (SD=1.33, range=2-10) for extroversion.

RESULTS AND DISCUSSIONS

The results of the descriptive statistics are found in Table 1.

Table1. Descriptive Statistics of The Sample

Study Variables	*n*	%	Mean	SD	Range
Depression	27,03		6.35	4.77	0-30
Physical activity frequency	21,95		5.01	2.37	1-7
Age	27,15		38.6	13.9	18-90
Gender					
Female	14,39	53			
Male	12,76	47			
Marital status					
Married	21,41	78			
Unmarried	5,739	22			
Education					
Primary	10,05	37			
Junior high school	6,385	23.5			
Senior high school	9,366	34.5			
High education	1,357	5			
Religious					
Yes	19,55	72			
No	7,692	28			
Smoking					
Yes	9,708	95.7			
No	2436	4.3			
Extroversion	27,03		7.18	1.33	2-10
Social trust	19,15		2.88	1.07	1-4

SD = Standard Deviation

Results from multivariate analysis are shown in Table 2 for life satisfaction as outcome variable. The table 2 indicates a positive association between frequency of physical activity and life satisfaction (β=0.01, p< 0.05).

Table 2. Regression Models Predicting Life Satisfaction

Variables	Coefficient	SE
Level 1 variables (n = 1,813)		
Intercept	2.82***	0.11
Physical activity	0.01*	0.02
Gender (ref. female)		
Male	0.02	0.05
Age	-0.005***	0.00
Marital status (ref. unmarried)		
Married	0.001	0.03
Education (ref. primary)		
Junior high school	-0.01	0.03
Senior high school	0.05	0.02
High education	0.13*	0.03
Religious (ref. non-religious)		
Religious	0.17***	0.02
Extroversion	0.02*	0.00
Social Trust	0.04***	0.01
Smoking (ref. non-smoking)		
Smoking	0.06	0.06
Adjusted R2	0.023	

Notes: * α<5%, ** *p*<1%, *** α<0.1%, SE = Standard Errors

Control variables shows a significant relationship with life satisfaction as well. Age shows an inverse significant association with life satisfaction (β=-0.005, p< 0.001). On the other hand, social trust and religiosity are significantly associated with life satisfaction and that association is positive (β=0.04, p< 0.001) and (β=0.17, p< 0.001) respectively. The same positive association is found with extroversion personality trait (β=0.02, p< 0.01). High education also shows a positive association with life satisfaction (β=0.13, p< 0.05). Surprisingly the association with marriage and life satisfaction is not significant. Furthermore, no association is found between life satisfaction, smoking, and senior high school variables. On the other hand, junior high school is found negatively associated with life satisfaction, even if the correlation is not significant.

The aim of this cross-sectional study is to investigate the links between frequency of physical activity and life satisfaction, using national representative data from the fifth wave of the Indonesian Family Life Survey. After controlling other confounding variables, findings show that the frequency of physical activity increase life satisfaction. It seems that the frequency of physical activity is considered to be a best predictor of life satisfaction, which means the more people increase their frequency in physical activity, the more they are satisfied with life.

The results of this study confirm the existence of a bidirectional relationship between physical activity frequency and life satisfaction in developing countries, include Indonesia. Findings from this study approve other related previous studies that shown a bidirectional association between physical activity and life satisfaction in developed countries (Baştuğ & Duman, 2010; Zayed et al., 2018). Physical activity is known to make helpful changes on human organic system such as body fitness, respiration, blood circulation, and it may have effects to psychological health as it has been found by (Baştuğ & Duman, 2010). This also approves the results from the study of Giorgio et al.(2018) who found that physical activity enhances better cardiovascular system, muscles functioning which is helpful for better brain functioning. This means that the more people do physical activity, the better there is an increase of their brain processing which develop their capacity of thinking and functioning. Findings of this study also are in line with Blackshear (2019)'s study who found that people who are engaged in physical exercises tend to increase their frequent physical activity. They are also in line with the results from the study of Zayed et al. (2018) who found that people who are more active in physical activity experience better both physical and mental health compared to those who are less active, and moreover they are highly satisfied with life.

In addition to frequency of physical activity that has a positive relationship with life satisfaction, this study finds that extroversion personality trait has a positive association with life satisfaction. This confirms the results from other previous related studies which reveal that extroverted people are less depressed and experience high level of life satisfaction (Diener, Suh, Lucas, & Smith, 1999; Veenhoven, 2016; Ndayambaje,Umwari, & Ayriza, 2020), and it is also in line with Lyubomirsky and Layous (2013)'s study which confirms that extroverts are happier and satisfied, moreover they are gratefully. Thus, extroversion personality trait has effects on people's life satisfaction, and it may determine their reactions towards events that happen to them in one way and another.

This study also finds that social trust has a positive association with life satisfaction. This result confirm the one of Kuroki (2011) which found that social trust has an important effect on human life satisfaction. This means that trustfully people experience high level of being satisfied with life compared to those who are neutral or those who do not. Another study from Indonesia found similar results (Nizeyumukiza, Cilik Pierewan, Ndayambaje, & Ayriza, 2020). In addition, this study found that religiosity has a positive correlation with satisfaction with life. This result is in line with Sujarwoto et al (2017)'s study which revealed that subjective life satisfaction is benefited from personal religiosity and from social community interaction.

Not surprisingly, findings from this study show that age is negatively associated with life satisfaction. This means that in developing countries, the more people grow in age, the more they get less satisfied with their lives. This result confirm the one carried out by Stone et al (2010), who found that age is a negative predictor of life satisfaction. Regarding education, this study find that the association between life satisfaction and education, especially high education. It is in line with what have been revealed by (Kuroki,

2011) that education is positive predictor of life satisfaction in developing countries. This means that the more people are educated, the better they get good jobs which enhance them to improve their living conditions and feel satisfied with life.

Regarding gender and smoking variables, this study finds a small correlation between those said variables with life satisfaction, but that association is not significant. The same as it is expected, this study finds that marriage is associated to life satisfaction, even if that association is not significant. This result is in line with other previous studies about marital status and life satisfaction which confirms that married people tend to satisfied with life compared to unmarried ones (Greenstein, 2016; Himawan, 2018; Sujarwoto et al., 2017; Ndayambaje et al.,2020). This is due to married people provide mutual supports and collaboration which enhance them to feel satisfied with their life compared to unmarried people who do not.

This study has some limitations that have to be acknowledged. First, the data used are somewhat old. New waves have to be implemented. Second, this is a cross-sectional study, no causal effects can be made. Third, the study relied on self-reported measures and objective measures might bring other insights.

CONCLUSION

In conclusion, it is seen that both of physical and psychological health need to be developed at the same time for people's well-being. Regular physical activity enhances body fitness and mental health, and then people who are physically active are better healthy than those who are less active. This means that doing regular physical activity leads to better physical and mental health which in turn increases being satisfied with life. Moreover, regular physical activity does not only contribute to body fitness but also on mental health. Therefore, different measures need to be taken to increase physical exercises as parts of people's daily life in order to protect their health and risks for their future, so that they may feel satisfied with their life.

This study is limited to only investigating the association between sport and well-being, specifically, the physical activity frequency and life satisfaction. Research has shown the results above. However, the activities are not classified into different types due to the fact that the study is eager to check if there is a link between the frequency of physical activities in general and life satisfaction. For future research, similar studies can be conducted to classify physical activities (for example: specific sports, endurance/resistance sports, etc.), and study the effects of each category on life satisfaction.

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CONFLICT OF INTEREST

This publication does not have conflict of interest with any parties. In addition, the overall research funding is independent. There is no support from other parties or sponsors that affect the results. As the correspondent author, I have informed you that the manuscript has been read and approved for submission by the author mentioned.

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