

Utilization of Active Life Leaflets on Improving Physical Activities of Integrated Islamic Junior High School Students in Bekasi

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Abstract. *Introduction:* Science and technology advancements not only provide various benefits to humans, but also make humans inactive. This is exacerbated by the COVID-19 pandemic, which limits human physical activity even more. In Indonesia, the proportion of the inactive population aged over ten years has increased over the last five years (2013-2018). A preliminary survey of Integrated Islamic Junior High School students in Bekasi revealed a large number of inactive students. As a result, researchers were curious about the Effect of utilizing Active Life Leaflets on Changes in Physical Activity. *Methods:* The research with a pre-experimental design was carried out in April–December 2018 at Integrated Islamic Junior High School Students Bekasi. A sample of 37 students was selected using a simple random sampling method. The intervention was in the form of active life education, using active live leaflets as media every week for 6 weeks. Data was collected by interview using a physical activity questionnaire. Data analysis consisted of univariate and bivariate analysis with a paired T-test. *Results:* The average physical activity before and after the intervention was 19.9 minutes/day and 60.8 minutes/day. There was a change in physical activity of 40.9 minutes/day with a p-value of 0.000000002. *Conclusion:* Utilization of leaflets as a medium of active life education significantly increased physical activity. This method can be applied to other schools by involving sports teachers.

Keywords: physical activity, active life, adolescence

1 Introduction

The rapid development of science and technology has altered human life. In the twenty-first century, particularly in the industrial era 4.0, with advanced technology, various new equipment has been developed with the goal of increasing worker productivity while reducing physical workload and disability caused by work. Various machines and other sophisticated equipment have replaced human work that previously required hard muscle work [1]. Science and technology advancements not only provide numerous benefits to humans, but also render humans inactive. This is exacerbated by the COVID-19 pandemic, which limits human physical activity even more.

According to WHO recommendations [2], Children and adolescents aged 5-17 should engage in at least 60 minutes of moderate to vigorous physical activity daily, mostly aerobic for a week. Based on this recommendation, respondents whose average daily physical activity was less than 60 minutes were considered inactive. In the world, there were about 23% of men

and 32% of women over the age of 18 who were not physically active in 2016. Meanwhile, the percentage of adolescents aged 11-17 years who lack physical activity was much larger, which was around 81% in 2010. Physical activity for the Southeast Asia region showed the lowest figure, namely 74% [3].

In Indonesia, inactive population aged > 10 years has increased in the last 5 years from 26.1% in 2013 to 33.5% in 2018 [4, 5]. The prevalence of lack of physical activity in children and adolescents aged 10-14 years in 2018, was much higher, at 64.4%, while in adolescents aged 15-19 years 49.6%. Cendani's research [6] found 80% of adolescent girls had low and very low physical activity. Agustina [7], also found about 52.2% of school children with low physical activity.

The increasingly sedentary lifestyle affected the general state of health worldwide. The prevalence of non-communicable diseases such as heart disease, diabetes, cancer, and risk factors such as blood pressure, blood sugar, and obesity also increased. Physical inactivity was a major factor in 21-25% of breast and colon cancers, 27% of diabetes cases, and 30% of ischemic heart disease.[8]. Furthermore, physical inactivity increased premature mortality and estimated that over 5.3 million of 57 million deaths worldwide in 2008 were attributable to physical inactivity [9].

By increasing physical activity, especially in those who are sedentary, their health status can be improved. Regular physical activity is a powerful way for adolescents to prevent various diseases. There are many advantages of physical activity for adolescent health, including maximizing muscular strength and flexibility, maintaining a healthy weight, reaching peak bone mass, developing cardiovascular healthy, developing neuromuscular awareness, improving cognition and mental health, including mood, sleep, and academic achievement, and improving well-being and social behavior [10].

Although in general the fact that physical activity is very beneficial for health is widely known, often this is not necessarily followed by behavioral changes to live a more active life. Studies have shown that only half of them have succeeded in increasing physical activity. Since the number of adolescents aged 10-14 is quite high in Indonesia, a method that can improve motivation is need to change lifestyles, especially for adolescents [11]. The Central Bureau of Statistics predicted the number of teenagers aged 10-14 years around 22,713,100 in 2017 and will increase to 22,638,300 in 2022 [12]. In addition, adolescence is a transition phase from childhood to adulthood that is marked by changes in the physical, psychological and psychosocial aspects that are very important in behavioral formation. [13][14]. In this phase, adolescents begin to give up behaviors that are considered childish and start to try behaviors that are considered adults [15]. Adolescence is a stage of identity-seeking or personality, which is a vulnerable phase in the development of human life. Adolescents who enter transition without adequate knowledge and support, and guidance from the environment will result in negative behavior [16][17].

Bekasi Integrated Islamic Junior High School is one of the colleges in the Bekasi region with approximately 520 pupils. As an integrated Islamic school, in addition to general lessons, there is also a Quran memorization program which is mandatory for every student. Furthermore, there are also indoor and outdoor extracurricular activities that are conducted once a week. Most of the students prefer indoor extracurricular activities that include low physical activities such as photography, English club, Arabic / Qiratul Kitab, and nasyid. Meanwhile, extracurricular activities that are classified as moderate or vigorous physical activities such as basketball and saman dance were less attractive. The results of a preliminary study conducted on 7th and 8th graders in August 2018, showed that out of 343 students 147

students were not active. For this reason, research is focused on increasing physical activity by utilizing active living leaflets as a medium in active life education.

2 Methods

2.1 Ethics

The research protocol was approved by the Jakarta 3 Health Polytechnic Health Research Ethics Committee before the research. The data was obtained after the teacher provided written informed consent. In addition, each participant received an explanation of the research in general and was asked for their consent and commitment to participate in the whole research process voluntarily and verbally.

2.2 Study Design

The type of this research was experimental with a pre-experimental design. The study was carried out at the Integrated Islamic Junior High School (SMPIT) Bekasi from August to December 2018. The initial survey data collection to select samples was carried out in August 2018, while the intervention took place in November-December 2018.

2.3 Participants

The sample size of 32 was determined by application [18] and was selected from 147 inactive students using a simple random method. Inclusion criteria include Grade VII and VIII students; 11-15 years old; Inactivity (moderate to vigorous activity a day mean < 60 minutes); Willing to participate and follow all research processes to the end; cooperative. While the exclusion consisted of: Respondents use assistive devices to walk; Respondents have a disease that does not allow moderate to heavy intensity physical activity.

2.4 Intervention

The intervention consisted of providing active life education once a week for six week using the Active Life Leaflets as a vehicle. The provision of active life education has been deliberately repeated to ensure that students read and remembered the leaflets provided and were motivated to make lifestyle change to be more active, as recommended by WHO [2]. In addition to encouraging aerobic exercise, researchers providing skipping as a means of increasing physical activity at the beginning of data collection.

2.4.1 Outcome Variable

The outcome variable in this study was physical activity, measured twice during the study, before the intervention at the beginning of the study, and after the intervention at the end of the study. Physical activity was measured by physical activity questionnaire derived from the Global Physical Activity Questionnaire from WHO [19]. The physical activity questionnaire has 16 questions (P1-P16), divided into three domains: work / school-related activities (6 questions), travel activities (3 questions), and recreational activities (6 questions). Also, there is a question about sedentary activities.

2.4.2 Processing and Data Analysis

SPSS program was used to process and analyze data. Data analysis included univariate tests and bivariate tests. The univariate analysis used the value of the proportion and the minimum, maximum, mean, standard deviation, and mean estimation with a 95% confidence level. Bivariate analysis was performed using the Paired T-test since most of the data were normally distributed.

3 Results and Discussion

3.1 Results

3.1.1 Gender

According to the results of the analysis, there were more girls than boys, at 54.1% for girls and 45.9% for boys. More details can be seen in Figure 1:

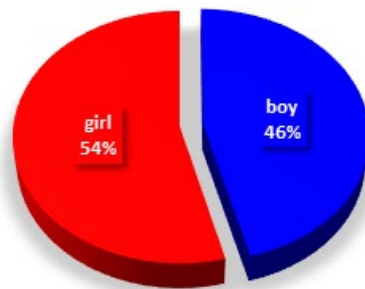


Fig. 1. Gender Distribution of Respondents

3.1.2 Physical Activity

Prior to the intervention, respondents' levels of physical activity were relatively low, as indicated by their average daily physical activity of only 19.9 minutes. Following the intervention, the respondent engaged in more physical activity, as seen by their increased average physical activity of 60.1 minutes.

Table 1 provides additional information:

Table 1. Distribution of Physical Activity Before and After the Intervention

| Physical Activity | Mean | Median | SD | Min – Mak | 95% CI |
|-------------------------|-------|--------|-------|---------------|---------------|
| Before the Intervention | 19,9' | 21,4' | 10,6' | 0 – 37,1' | 16,4' – 23,4' |
| After the Intervention | 60,1' | 51,4' | 33,1' | 15,7 – 137,1' | 49,8' – 71,9' |

The intervention provided was also able to motivate 41% of respondents to be active by doing moderate to vigorous physical activity for at least 60 minutes every day, as shown in Figure 2:

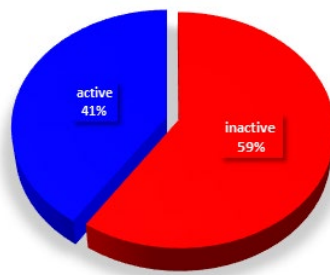


Figure 2. The Physical Activity Level Distribution of Respondents

3.1.3 Pengaruh penyuluhan dengan media laeflet terhadap aktivitas fisik

According to the analysis's findings, the intervention raised the average amount of physical activity from 19.9 minutes to 60.1 minutes, an increase of 40.9 minutes. Based on the test results, a p-value of 0.000000002 was discovered, which was less than (0.05). This indicates that there was a statistically significant difference between physical activity before and after the intervention. The intervention provided can therefore be said to boost the respondent's physical activity. See table 2 for additional information:

Table 2. Test Results of Physical Activity Differences in Mean Before and After the Intervention

| Variable | Mean \pm SD | 95% CI | Nilai P |
|--|-------------------|-------------|------------|
| Mean Difference of Physical Activity Before and After the Intervention | 40,9' \pm 35,1' | 52,6 – 29,5 | 0,00000002 |

3.2 Discussion

The purpose of this study was to ascertain how changes in students' physical activity were affected by using an active life leaflets as a vehicle for active life education. In this study, the intervention raised the respondent's daily physical activity from 19.9 minutes to 60.1 minutes,

an increase of 40.9 minutes. With a p-value of 0.000000002, the test findings demonstrated that the change was statistically significant.

In order to increase awareness about active living, physical activity education with leaflet media has stimulated sensory processes, particularly sight and hearing. Knowledge is information that people come into contact with and acquire through observation and reason to identify something they have never seen or felt before. Knowing anything through sensory processes, such as detecting particular objects through touch, taste, smell, and sight, results in knowledge. [20].

The result of this improvement in understanding is then followed by adopted a more active lifestyle. According to cognitive-based model, decisions are made based on reasonable cognitive considerations, allowing for changes in behavior when new information is deemed to be helpful [21][22]. Knowledge, awareness, and a positive outlook are the foundations for adopting a new behavior or a habit of active life. Notoatmodjo [20] claimed that before adopting a new behavior, one must pass through the stages of awareness, interest, evaluation, trial, adoption.

The research findings of Simbar et al. [23], who discovered that frequent active life education could promote physical activity, lend credence to the findings of this study. Similar findings were also found in another study Sari et al. did on junior high school students in Pekanbaru. According to this study, active life education that uses visual media as an intervention could boost physical activity [24].

4 Conclusion and Recommendation

4.1 Conclusion

Students at Islamic Integrated Junior High School Bekasi could improve their physical activity by participating in active life education interventions and receiving active life leaflet media.

4.2 Recommendation

This strategy of physical activity education can be used in other schools, by giving sports teachers in more authority. Additionally, it is preferable to include a comparison group that regularly mixes active life education with other aerobic workouts to enhance the quality of future studies that are similar to this one.

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