Teaching Physical Education Based on Self-Management Skill
Developing the Active Lifestyle, Physical Activity Level and Physical Fitnes on College Students

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Abstract: Majority of Indonesian college students do not have good health and fitness levels, and it must be a big challenge for educators. In order to increase a healthy lifestyle and long life activity, it is important to determine the main factors associated with active behavior. Promoting lifelong active lifestyle is the key to a healthy-lifestyle. Promoting healthy and active lifestyle is a major goal in physical education. Researchers have identified some specific skills, such as self-management skills, which can be used to help changing the lifestyle. The purpose of this study is to determine how the implementation of teaching physical education-based self-management skills to develop an active lifestyle, physical activity level and physical fitness on college student. It used a quasi-experimental design with pretest-posttest design of Control Group. Subjects were college student of Universitas Pendidikan Indonesia who joined the physical education and sport course. Divided into two experimental groups, consisting of an experimental group and a control group. Instruments in this study were the International Physical Activity Questionnaire (IPAQ) and adult physical fitness tests. Implementation of teaching physical education-base self-management skill has a significant effect on the improvement of physical fitness and the level of physical activity, as a result of active lifestyle awareness. Teaching physical education-base self-management skill must be balanced with the understanding of the type of physical activity and various practical movement activities that can be done everyday.

1 INTRODUCTION

In Europe, developing lifelong physical activity into school learning has been a serious concern over the past decade. In some European countries, implanting an active lifestyle lately is an important mission of physical education (Almond and Harris, 1998; Cardon and De Bourdeaudhuij, 2002; Harris, 2005), and there is a great emphasis on health-related activities (health-related activity) in the physical education curriculum (Almond and Harris, 1998; Harris, 2005). Promoting a healthy and active lifestyle is a main goal in physical education (UNESCO, 2015). Regular physical activity is an important component of a healthy lifestyle for both children and adults. There have been many programs to change healthy lifestyles based on cognitive social theory (Bandura, 2004) and behavioral changes based on the self-regulation model (Kanfer and Gaelick-Buys, 1991). Researchers have identified

several specific skills, such as self-management skills, that can help to change lifestyles.

Initially, self-manajement is often used successfully in the treatment of chronic diseases such as diabetes and asthma (Barlow, Wright, Sheasby, Turner, and Hainsworth, 2002; Wright, Barlow, Turner and Bancroft, 2003). Self-management techniques then developed and are used in the first prevention program because cognitive behavioral techniques are a more effective approach in facilitating behavioral change, than simply providing knowledge (Douthitt and Harvey, 1995). In the context of school learning, Cardon et al (2009) it has applied self-skill in physical education learning to raise awareness for physical activity and has reportedly increased the level of physical activity in primary school children, by actively involving teachers and parents. It's different from learning physical education and sports at the university level. Apparently, a different approach is required in teaching physical education and sports. So it is

expected at the level of college students to be able to arrange their own physical activity and know the degree of health. Educators are no longer just giving treatment to improve the quality of fitness. However, it is no secret that the majority of Indonesian students do not have adequate levels of health and fitness (Sriramania, 2010) (Herianto, Rosdiana, 2012) so this is a great challenge for educators. In order to implement a lifelong and healthy lifestyle, it is important to know the main factors associated with active behavior (Mckenzie and Lounsbery, 2013). Being familiar with the active lifestyle is the key to healthy physical life.

At the student level, they are expected to be able to obtain high-order learning level so that the educator can frame the problem, which is able to develop creativity through analysis, synthesis and self-evaluation, in which is related to self-management skills. Students will learn self-management and become managers for themselves through self-learning, by developing their ideas. Educators will make room for students to develop ideas of activities that can be developed in class to support students as managers themselves. The condition of the teaching process in the field is that it tends to emphasize on the results, so that the learning process appears to only give treatment to just improve fitness. The picture related to the learning process activities, more emphasis on fitness improvement without any behavior change process through the understanding of active life pattern and awareness for regular physical activity. This learning process seems monotonous to students and more time is spent by studying physical activity or sports skill finesse without involving cognitive behavior of learners. Therefore, this research is important to be done because it will give an idea how far the learning based on self-management skills based on alternative solution in answering the problems that happened, namely to increase the level of physical activity and fitness of the students.

The self-management skills program promotes physical activity outside the school by teaching the cognitive and behavioral skills needed to develop and maintain an active lifestyle (Marcoux et al., 1999). Learning of self-management skills is expected to affect the awareness of physical activity and the level of activity of learners through the design of learning that leads students to do the self-

learning and also structured, to organize their physical activities. Learning self-management skills are designed to increase awareness for exercise and get regular exercise (not just at lectures) by teaching active behavioural skills to students. (Cardon et al., 2009). Learning self-management skills can promote lifelong physical activity required by all age groups, including the student level. With behavior change through self-management based skills-based learning, it is expected that lifelong lifestyle development will occur. Based on the above description, the purpose of this research is to acknowledge the extent to which physical education based on self-management skill that can develop students' active lifestyle, physical activity level, and physical fitness.

2 METHOD

2.1 Setting and Participants

The research method used in this research is experimental method, using quasi experimental design with Pretest-Posttest Control Group design (Creswell, 2015). This research involves lecturers and students at Universitas Pendidikan Indonesia. The learning design as well as various learning tools (teaching materials), assessment tools will be designed jointly by research lecturers and students. The samples involved were the second year students of Universitas Pendidikan Indonesia (year 2015). A total of 76 people, age ranging from 19-21 years (mean, 19.79 ± 0.38), 15 men and 62 women were divided into two research group. One group of 36 people comprised of 7 men and 29 women, ages of 19.36 ± 0.23, were given treatment with self-management based of learning skills and a control group of 40 people consisting of 8 males and 33 females, ages = 20.15 ± 0.22 used physical education learning based on the existing curriculum.

2.2 Instrumentation

Physical activity levels of each sample were evaluated using the short-form version of the IPAQ's English version (Hagströmer, 2011), converted into Indonesian language, and adapted from previous research (Kurt, 2017). Questionnaires that have been converted into Bahasa were then made into Google

form. The IPAQ questionnaire was filled online by students using google form guided by researchers. To measure the level of physical activity and the amount of calories, samples used the automatic report of the IPAC, developed by Blasio et.al (2017). To measure Physical Fitness, researchers used the President's challenge adult fitness test consisting of measurements. The IPAQ questionnaire used aims to measure how much physical activity is performed and the calories released by each student within a week back. Body Mass Index (BMI) to measure body composition, Half Sit-Up and Push-Up to measure muscular strength, sit and reach to measure flexibility and 1.5 mile run for cadavascular measurements.

2.3 Intervention Program

The research process is divided into three stages. In the first stage of pre-test, the tests performed are physical fitness tests and physical activity level questionnaires. After having initial data, it was proceed with the provision of learning materials according to physical education. One group used a self-management approach to self-management skills and a control group used an instructional learning in accordance with existing syllabus. The more detailed learning materials are described in Table 1.

Table 1: Learning materials and homework task on PE based-self management skills.

Lesson	Subject	Cognition	Homework task
Lesson 1	Introduction: the benefits of getting an active lifestyle, understanding and level of physical activity	- Understand the need and importance of an active lifestyle, PA Level and Physical Fitness	- Reviewing the literature of PA Level and Physical Fitness according to the Lecturer's direction
Lesson 2	- Self-Assessment skills: Independent Evaluation of PA Level and Physical Fitness - Fills the PA level activity and performs a physical fitness test - Cardiovascular / Aerobic Activity I - Flexibility activity (individual-pairs)	- Understanding the strength and weaknesses of fitness and physical activity level in daily physical activity. - Understanding the benefits of aerobic activity and its energy system - Understanding the benefits of having good flexibility.	- Evaluating and understanding the fitness of PA Level on each individual and reporting in the form of a google form report.
Lesson 3	- Self-Monitoring Skills: monitoring physical activity performed daily using physical activity logs - Cardiovascular activity / aerobic II - Flexibility activity (dynamic-static-PNF)	- Acknowledging the level of daily risk activity done (Mets an Kcal). Able to calculate the level of physical activity and Calories needed - Acknowledging the benefits of aerobic activity and its energy system - Acknowledging the benefits of having good flexibility.	- Recording physical activity for a week - Using Pedometer 3x / week on android-based HP / iPhone
Lesson 4	- Goal-Setting Skills: - Set the targets (realistic and achievable) to be achieved at the end of the lecture - Muscular Endurance I activity (muscle endurance activity through group or pair play)	- Knowing the calories that body needs for daily activities which is adjusted to the level of physical activity performed; - Knowing the benefits of having good muscle DT.	- Setting Goal Settings - Recording physical activity for a week - Using Pedometer 3x / week on android-based HP / iPhone
Lesson 5	Overcoming Skills: - able to overcome the limitations of facilities or tools for physical activity, able to refrain from eating healthy foods. - Muscular Endurance Activity II	- Knowing in general the types of fibrous foods, carbohydrates, protein, fat and process into energy. - Performing physical activity with or without tools, performing physical activity alone and continues. - Knowing the various movements of developing D.T muscles and muscles that are trained.	- Trying to prepare the healthy food needed in accordance with physical activity. - Recording physical activity for a week - Using Pedometer 3x / week on android-based HP / iPhone
Lesson 6	Finding social support: - Advocating the importance of the sports community. - Activity Strength Muscle I (muscle strength activity through group games or pairs).	- Know the benefits of joining the sports community. - Dig for an effective, economical and suitable sport for every individual.	- Advise following SME Sports - Recording physical activity for a week - Using Pedometer 3x / week on android-based HP / iPhone
Lesson 7	Managing Time: - Set the total time spent each day. - Activity Strength Muscle II (muscle strength activity using tools).	- Helps to allocate time according to a predetermined plan. - Generally speaking, it is able to increase the strength using the loaded tool.	- Checking out missed physical activities. - Recording physical activity for a week. - Using Pedometer 3x / week on android-

Variable	Control group		Intervention		t value
	Pre-	Post-	Pre-	Post-	
1,5 miles/minute	20,59 (14-34,5)	20,09 (13,1-33,5)	21,89 (10,65-27,5)	20,40 (9,55-28,2)	.023
METs-min/week	2163 (693-5093)	2784 (768-5355)	1423 (360-4650)	2680 (384-4650)	.004
Kcal/week	1964 (607-4608)	2489 (601-5449)	1363 (180-3876)	2518 (210-4955)	.008

*indicates statistical significance (p<.05)

3 RESULTS AND DISCUSSION

Measurement Physical Fitness tests and physical activity levels are performed before and after a self-management skills program (SMS) based learning program. The learning process undertaken lasts for one semester of physical education lesson for college student level. The meetings are held once per week consisting of 16x meetings. The overall learning evaluation results show an increase in physical fitness outcomes and physical activation levels.

Physical fitness. Based on Table 1, when it is viewed from physical fitness variables, self-management skills based of physical education (SMS) can improve some components of fitness. When viewed from the body mass index (BMI), in this study, it is divided into five classifications of BMI for asia-pacific based on WHO classification (Barba et al., 2004), which are, underweight, normal, overweight, pre-obes and obesity. In this study no samples were included in the classification of obesity. BMI difference is seen from the increase of BMI to normal. For BMM classification overweight SMS significantly (.013) was compared to control group, while for BMI underweight SMS and control group did not differ significantly (.106) to BMI difference. While for the push-up and half-sit-up (muscular strength and endurance) variables, the SMS group and control group did not differ significantly (.35) (.129). Likewise for the variable sit and reach (flexibility), there is no significant difference (.904) between SMS and control group. Another case with the 1.5 mile (aerobic fitness) run, there is a significant difference (.023) between SMS and control group.

Physical activity levels. Based on the calculation of IPAC questionnaire, the application of SMS physical education affected significantly (.004) to the increase of physical activity level. Similarly, the number of calories removed differ significantly (.008) with group control.

Lesson table (continued)

			based HP / iphone. - Groups organize motion activities related to health-related fitness.
Lesson 8-11	Create, organize and perform group physical activities.	- Able to interpret the activities undertaken. - Understand the sequence of physical activity.	- Organize activities related to fitness related fitness as well as skill related fitness group.
Lesson 12-15	Create, organize and perform independent physical activities.	- Able to interpret the activities undertaken. - Understand the sequence of physical activity.	- Organize activities related to fitness related fitness as well as skill related fitness group.

2.4 Statistical Analysis

All data were analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics (frequencies, means, standard deviations, ranges) are used to describe the demographic and background information. Using Independent Sample T-test (for parametric data), and Mann Whitney (for non-parametric data) for establishing a self-management skill based on physical activity level and physical fitness at college student.

Table 2: Averages, minimums and comparison of data between intervention and control groups.

Variable	Control group		Intervention		t value
	Pre-	Post-	Pre-	Post-	
BMI (kg/m^2)	20,92 (15,43-29-14)	21 (15,79-28,51)	22,70 (13,7-37,17)	22,54 (15,07-36,9)	-
Underweight	17,35 (15,43-18,30)	17,82 (15,7-18,9)	16,5 (13,9-18,1)	17,2 (15-18,1)	.106
Normal	20,46 (18,52-22,84)	20,53 (19-22,57)	20,64 (18,6-22,5)	20,86 (18,7-22,5)	.465
Overweight	23,92 (23,19-24,56)	23,8 (23,1-25,1)	23,7 (23-24)	23,17 (22,6-23,5)	.013
Pre-Obes	26,91 (25,3-29,14)	26,52 (25,2-28,5)	28,28 (25,3-30,4)	27 (24,6-29,3)	.008
Push up	27,2 (5-57)	32,6 (20-63)	19,69 (4-40)	26,44 (9-47)	.35
Half Sit-up 60"	24,9 (6-48)	30,53 (17-54)	20,61 (8-35)	28,39 (10-47)	.129
Sit and reach	5,8 (-2-22)	8,4 (1-24)	7,73 (1-14)	10,37 (1-25)	.904

4 CONCLUSIONS

The self-management skills based on physical education on the student level should emphasize the student to be able to evaluate his own fitness level and to understand the importance of physical activity for his or her health. The cultivation of an active lifestyle through physical learning based on self-management skills should be balanced with an understanding of the type of physical activity and practical daily movement activities that can be done daily. It is because the planting of an active lifestyle in the context of physical education, is a strategic way to increase the potential and motivation to move active (Houston and Kulinna, 2014).

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