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IMPLEMENTING GO PREGNANCY EXERCISE (GOPEX) APPLICATION TO IMPROVE THE KNOWLEDGE FOR BUILDING HEALTHY PREGNANT WOMEN

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Abstract

One way to prevent complications from childbirth is to do physical activity. The health status of the mother during pregnancy needs to be considered from the beginning of pregnancy, because doing regular and directed physical activity can maintain the health of the mother and fetus during pregnancy. Exercise is one of the physical activities so that pregnant mothers stay healthy and fit. There is still a lack of pregnant women to exercise due to various factors, one of which is a lack of knowledge, so health education is needed to improve their knowledge. This community service was carried out in Padamukti Village, Solokanjeruk, Bandung Regency, with a total of 37 pregnant women. This activity consists of 3 stages, namely preparation, implementation, and evaluation. The health education provided is knowledge about exercise in pregnancy using the Go Pregnancy Exercise (GoPEx) application media. This activity lasted for 90 minutes and was carried out pre- and post-test to assess the difference in the level of knowledge before and after the provision of education. There was a mean difference in knowledge's score between before and after giving the health education by the Go Pregnancy Exercise (GoPEx) Application (p-*value* <0.05). Pregnant women's knowledge increases after being given a health education. It is necessary to intensify the socialization of the use of the GoPEx application to increase the physical activity of pregnant women to realize healthy pregnant women.

Keyword: *Pregnancy, Exercise, Pregnant Women, Physical Activity, Application*

Abstrak

Salah satu cara mencegah komplikasi persalinan adalah dengan melakukan aktivitas fisik. Status kesehatan ibu selama hamil perlu diperhatikan sejak awal kehamilan, karena melakukan aktivitas fisik secara rutin dan terarah dapat menjaga kesehatan ibu dan janin selama hamil. Olah raga merupakan salah satu aktivitas fisik agar ibu hamil tetap sehat dan bugar. Masih kurangnya ibu hamil untuk berolahraga disebabkan oleh berbagai faktor, salah satunya adalah kurangnya pengetahuan, sehingga diperlukan pendidikan kesehatan untuk meningkatkan pengetahuannya. Pengabdian masyarakat ini dilaksanakan di Desa Padamukti, Solokanjeruk, Kabupaten Bandung, dengan jumlah ibu hamil sebanyak 37 orang. Kegiatan ini terdiri dari 3 tahap yaitu persiapan, pelaksanaan, dan evaluasi. Edukasi kesehatan yang diberikan berupa pengetahuan tentang senam hamil dengan menggunakan media aplikasi Go Kehamilan Latihan (GoPEx). Kegiatan ini berlangsung selama 90 menit dan dilakukan pre dan posttest untuk menilai perbedaan tingkat pengetahuan sebelum dan

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sesudah pemberian edukasi. Terdapat perbedaan rata-rata skor pengetahuan antara sebelum dan sesudah pemberian pendidikan kesehatan dengan Aplikasi Go Kehamilan Latihan (GoPEx) (p-value <0,05). Pengetahuan ibu hamil meningkat setelah diberikan pendidikan kesehatan. Perlu digencarkan sosialisasi penggunaan aplikasi GoPEx untuk meningkatkan aktivitas fisik ibu hamil guna mewujudkan ibu hamil sehat.

Kata Kunci: *Kehamilan, Olah Raga, Ibu Hamil, Aktivitas Fisik, Aplikasi*

INTRODUCTION

One way to prevent complications from childbirth is by doing physical activity, in Indonesia and various other regions, there are many myths circulating from ancient times that state that physical activity needs to be limited during pregnancy. However, various studies show that physical activity has a positive effect on the physical and mental health of pregnant women, as well as avoiding mothers from complications during pregnancy and postpartum (Ketut et al., 2022).

Physical activity is modifiable health risk factor contributes to maternal mental health and quality of life. The 2019 Canadian guideline for physical activity throughout pregnancy recommend that all pregnant women can participate in physical activity throughout pregnancy with the exception of those who have contraindications; pregnant women should accumulate at least 150 min of moderate-intensity, minimum of 3 days per week, physical activity each week to achieve clinically meaningful health benefits and reductions in pregnancy complications (Mottola et al., 2018). Physical activity during pregnancy decreases fatigue, tension, anxiety, and depression and improve breastfeeding results (Perales et al., 2023). The women who rated their quality of life higher in this domain declared higher energy expenditures associated with *vigorous activity*, as well as with *occupational activity*, and *sport*/*exercise* activity (Giles et al., 2023).

The health status of the mother during pregnancy needs to be considered from the beginning of pregnancy, because by doing regular and directed physical activity can maintain the health of the mother and fetus during pregnancy. Physical activity is the movement of moving limbs that expend energy to maintain physical and mental health, maintain quality of life to stay fit. Activities carried out by pregnant women if carried out regularly and directed can facilitate the delivery process, so that it will reduce the number of pain, disability, and death of pregnant women and childbirth (Julianti et al., 2023).

Exercise is one of the physical activities so that pregnant mothers stay healthy and fit. Some of the physical activities that can be done by pregnant women include pregnancy exercises, swimming, walking, yoga exercises, pilates exercises, kagel exercises to facilitate urination in pregnant women, jogging (light and relaxing small jogging), cycling and other activities in cleaning the house such as mopping (Giles et al., 2023).

According to the results of a study conducted by (rachmi, et al. 2023) explained that as many as 24 pregnant women were successfully interviewed and analyzed for data. From the results of the study, it was found that the level of physical activity in pregnant women in Yogyakarta is still relatively low. Only a small percentage of respondents admitted to regular physical activity. The physical activity carried out is quite diverse, ranging from doing homework to walking. The biggest supporting factor for pregnant women in physical activity is the desire for a smooth delivery process, maintaining the health of the mother and

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fetus, and being accompanied when exercising. There is also research conducted by Perales (Perales et al., 2023).

Studies reported that less than 15% of women comply to the recommended physical activity per week, with most having concerns regarding exercise and fetal wellbeing. Another study reported that among the 109 pregnant women included, 82 (75.2%) were classified as sedentary/little active and Only 19.3% women exercised during pregnancy with slow walking being the most reported exercise (Yusmutia, 2020). The majority of pregnant women (73%) in Indonesia engage in vigorous physical activity, whereas 21.8% engage in moderate PA and 5.1% engage in light PA, according to a recent study. The household/caregiving activity of expectant women revealed that 66.7% of them were vigorously active. More than fifty percent of expectant women in this study were sedentary. 59% of expectant women engaged in sports activity, while 66.7% had sedentary occupations (Chan et al., 2019).

Various studies have identified factors associated with lower physical activity. Low maternal education and unemployment, pregnancy symptoms/discomforts, multiparity and fatigue, lack of time, lack of motivation and safety concerns or fear have been shown to influence physical activity participation among pregnant women. Moreover, identified cultural and religious beliefs, lack of social support, and other duties (Todorovic et al., 2020). In addition, studies describing environmental barriers to physical activity during pregnancy especially a lack of access to facilities/resources and inclement weather. Discomfort pregnancy, lack of safety awareness, and social pressure were common impediments to physical exercise during pregnancy. Social support and perceived benefits-physiologic, psychological, and social-enabled physical activity during pregnancy is needed (Cilar Budler & Budler, 2022).

Padamukti Village is a village located in Solokanjeruk District, Bandung Regency. This village has a new contribution to the development of village tourism in the East Bandung Area. In the past, this village was included in the underdeveloped area, but over time, Padamukti Village slowly rose to become a fairly developed area and became the center of visits and publicity from several regions in West Java through water tourism and education in the area of Kampung Sunda Villa Kancil and Goes Park, a thematic park as a symbol that the location of Padamukti village is favored by bicycle sports fans. However, the increasing bicycle sports activities there are only intended for ordinary people, not followed by activities intended for pregnant women. This shows that many pregnant women continue to carry out their daily routines as housewives without paying attention to exercise or exercise that is good for pregnant women. From the data obtained from midwives and village cadres, Padamukti said that pregnant women have never participated in pregnancy sports classes, and even rarely get information related to exercise in pregnancy.

Based on previous description, the service provider is interested in providing health education about exercise to pregnant women through the use of the Go Pregnancy Exercise (GoPEx) Application for pregnant women in Padamukti village, Solokan Jeruk Sub-District, Bandung District area, West Java, Indonesia.

METHOD

The Community Service Location

The community service activity was held for pregnant women in Padamukti village, Solokan Jeruk Sub-District, Bandung District area, West Java, Indonesia. The distance between STIKep PPNI Jawa Barat (original locus of community service's provider) and

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Padamukti Village (Destination Locus) is 29,3 km, with the mileage about 1 hour, 3 minutes by car.

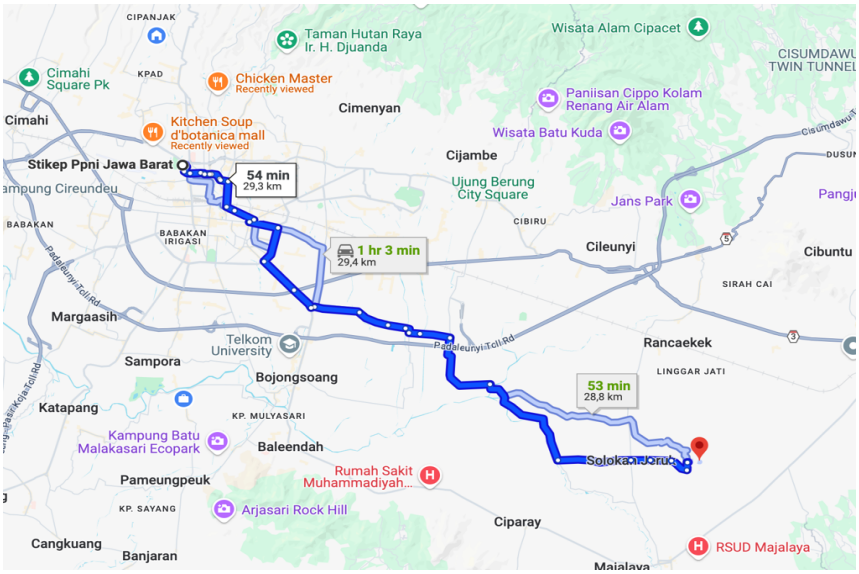

Figure 1. Map of Community Service Location

Participant in this activity were pregnant women in Padamukti village, Solokan Jeruk Sub-District, Bandung District area, West Java, Indonesia. The total number of participants was 37 persons. The community service activity was divided into three stages, namely: the preparation, the implementation, and the monitoring and evaluation.

In this stage, the team arranged material for a health education. The material was related to pregnancy exercise and how to use Go Pregnancy Exercise (GoPEx) application. Moreover, in this stage, the team prepared the schedule, equipment, facilities, infrastructure, etc. Then, the activity was held for 90 minutes (5 minutes for preparation, 5 minutes for pre-test, 60 minutes for lecture in health education, 20 minutes for question and answer session) by face-to-face. The material consists of a definition of pregnancy exercise, exercise's advantages, exercise's contraindication, exercise's guidelines for each trimester or gestational age. On the other hand, the team also introduced Go Pregnancy Exercise (GoPEx) application and delivered how to use it. The Pregnancy Exercise (GoPEx) application is one of media to promote pregnant women to do active and safe pregnancy exercise based on their gestational age.

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Figure 2. The implementing stage of delivering a health education

This stage was a part of explanation and running the Go Pregnancy Exercise (GoPEx) application. They tried to login and simulated all features in the GoPEx application. The content and steps in this application were showed in Fig 2.

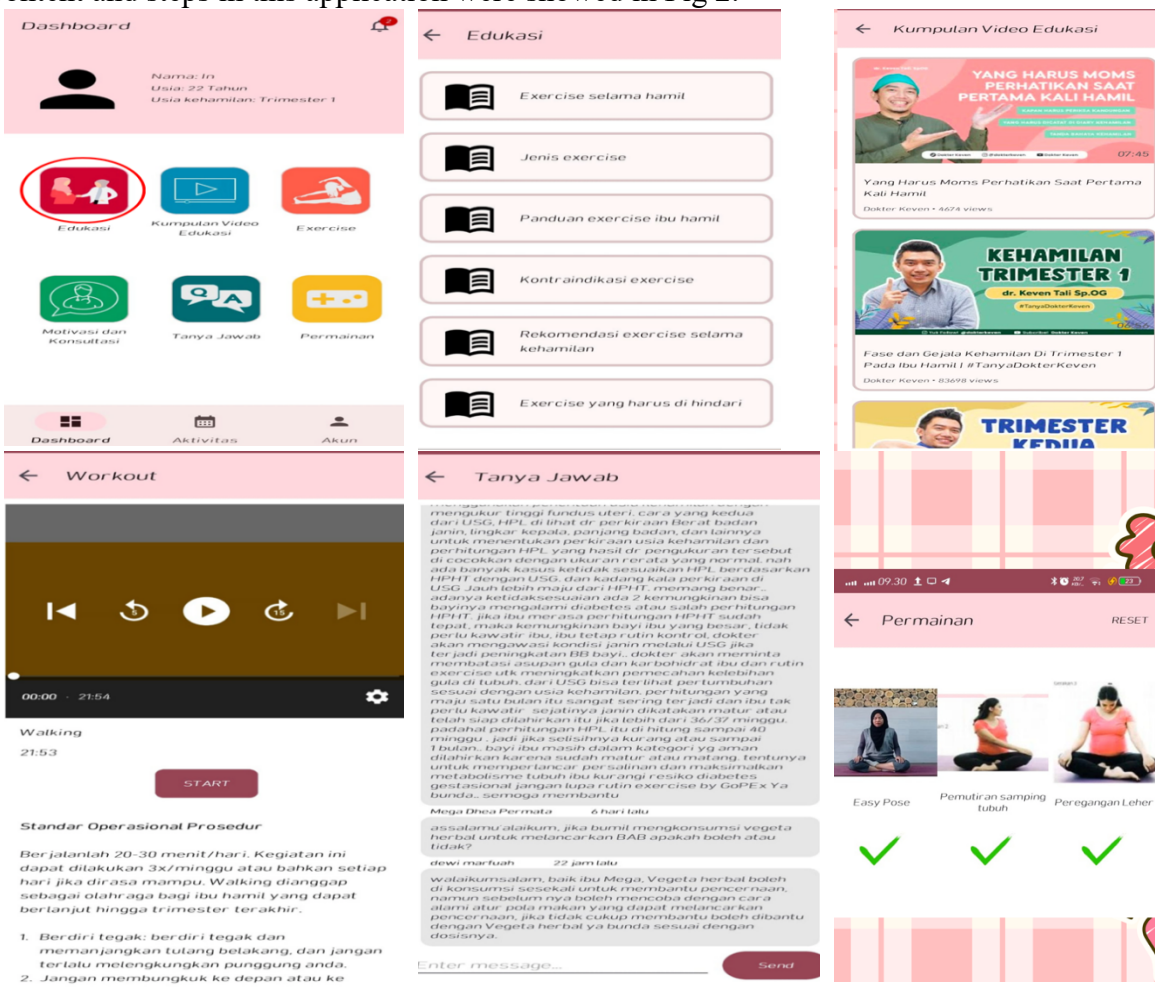

Figure 2. Capture of Go Pregnancy Exercise (GoPEx) Application

The end stages, the team evaluated the process during and after the activity. Participant's knowledge was measured by questionnaires for pre and post-test. The result was obtained by compared of both tests. Observation and monitoring also applied during the process.

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RESULT AND DISCUSSION

The Difference of Participant's Knowledge during the process of the application of GoPEx was listed in Table 1.

Table 1. The Difference of Participant's Knowledge between Before and After Intervention

	Before Mean (±SD)	**After Mean (±SD)**	***P-Value***
Knowledge	191,6 (±11,32)	196,3 (±19,71)	0,001

Based on table 1, it showed that there was a significant difference in mean between before and after intervention or giving a health education (*p – value* <0,05). It is indicating the enhancing of participant knowledge in healthy pregnancy and another aspect about it.

DISCUSSION

There was a difference in the average score of the level of knowledge of pregnant women before and after exercise (*p – value* <0.05). This result supported the previous study that there was a significant difference between experimental and control group at level of p<0.001. The experiment group was given information by Mobile Health (Dewi Marfuah et al., 2021). There was a significant difference between the knowledge scores in women of childbearing age who received social media-based information education intervention compared to the group that did not get the intervention with p-value = 0.000 (p < 0,05) (Dian Anggraini et al., 2021). Another previous study showed a decreasing somatic symptom after informed by mobile health. The mean value at pre and post-test, were 3.88 +- 0.45 and 2.04 +- 0.432 respectively. The affective symptoms in experimental group had different in mean at pre and post was 8.54 dan 2.62 with standard deviation 0.582 and 0.571 (p 0.000, p < 0.05). There was a significant difference in somatic and affective symptoms at pre and posttest with Mann-Whitney Test (p 0.000 and 0.001, p < 0.05) (Marfuah et al., 2022).

The difference in breast cancer knowledge in women of childbearing age (WUS) in the intervention group before and after social media-based information affected on breast cancer knowledge in women of childbearing age (WUS). It showed as results of questionnaire scores before and after social media-based information education. Social media-based information has increased breast cancer knowledge in women of childbearing age (WUS). It concluded that education by social media-based information can increase knowledge. Knowledge can be influenced by information sources and one of the ways to provide information is education (Dian Anggraini et al., 2021).

Various studies have identified the factors associated with lower physical activity. Low maternal education and unemployment, pregnancy symptoms/discomforts, multiparity and fatigue, lack of time, lack of motivation, and safety concerns or fear have been shown to influence physical activity participation among pregnant women. Moreover, identified cultural and religious beliefs, lack of social support, and other duties (Todorovic et al., 2020). In addition, studies describing environmental barriers to PA during pregnancy as a lack of access to facilities/resources and inclement weather. Discomfort pregnancy, lack of safety awareness, and societal pressure were common impediments to physical exercise during pregnancy. Social support and perceived benefits-physiologic, psychological, and

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social-enabled physical activity during pregnancy (Cilar Budler & Budler, 2022). Pregnant women do not do the exercise because of the lack of knowledge gained about safe exercise in pregnant women. The mother's sufficient level of knowledge can be caused by several factors, including the environment such as low of information received by the mother. For this reason, mother need more information on safety exercise during pregnancy in order to achieve healthy pregnant women.

Knowledge is the result of a sense of curiosity through sensory processes, especially in the eyes and ears towards certain objects. Knowledge can also be defined as everything that is known based on the experience of the human being himself and the knowledge will increase according to the process of experience he experiences. The knowledge possessed by a human being is the result of what the human being does in seeking the truth or all the problems he faces. This activity is carried out by humans based on their own desires (Marfianti, 2021).

One of the factors that affect knowledge is education. The educational characteristics in this study are based on the educational characteristics of more (51.9%) high school/vocational school respondents. In the previous study explained that the level of education of mothers affects brain performance to think critically. Mothers who have a high level of education tend to have an open mindset and are informed while mothers with less education tend to think old-fashioned and lack of information (Dian Anggraini et al., 2021).

Mobile applications have a high enough intensity to interpret educational materials. Meanwhile, the delivery of material that is only through words is very less effective, but the media will be more effective if it collaborates with other props because the health materials and messages conveyed are easier to reach and understand by the people who are participants in health promotion activities. Ideally, the more human senses are used to receive something, the more and clearer the understanding of something will be, this has an impact on a person's memory ability (Marfuah et al., 2022).

Health promotion media through android-based applications can be implemented to mothers as the initial stage of debriefing knowledge, attitudes and self-efficacy in a healthy lifestyle. Mother with good knowledge increase the mother's attitude and self-efficacy (Marfuah & Mutiara, 2020). The GoPEx application was developed in accordance with cultural adaptation in Indonesia. The exercises provided in the application are adjusted to the mothers' requirements. It also designed to the "trimester" timeline fit to mother condition. Moreover, the existence of mobile phone is widely accessed to many people, so the existence of GoPEx will be very helpful for pregnant women to get information related to exercise in a safe pregnancy. In addition, the features presented also provide free consultation services. The implementation of a healthy lifestyle for mothers needs positive understanding, willingness, and self-efficacy of mothers. (Novianto et al., 2019). The promotion of the GoPEx application to increase knowledge is needed to increase the literacy of pregnant women on exercise during pregnancy.

CONCLUSION

There was an enhancement in pregnant woman knowledge after practices in Go Pregnancy Exercise (GoPEx) Application. This application should apply in the long period of pregnancy.

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