Available online: http://openjournal.wdh.ac.id/index.php/edudharma

Edu Dharma Journal: Jurnal Penelitian dan Pengabdian Masyarakat

ISSN (Print) 2597-890 X , ISSN (Online) 2686-6366

No. ISSN : 2597-890X (media cetak) 2686-6366 (media online)

DOMINAN FACTORS RELATED TO PHYSICAL ACTIVITY IN PREGNANT WOMEN

Dewi Marfuah*, Ameliya Salsabila Rahman, Astri Mutiar, Dian Anggraini

[1] STIKep PPNI Jawa Barat, Muhamad Street No. 34, Bandung, West Java, 40173, Indonesia

ARTICLE INFORMATION

***Corresponding Author**

Name: Dewi Marfuah

E-mail: dewi.marfuah@yahoo.com

Keywords:
Physical Activity_1
Pregnant Women_2
Occupation_3
Education Level_4
Dominan Factors_5

A B S T R A C T

Physical activity in pregnant women is still low in Indonesia, even though doing physical activity during pregnancy has many health benefits and is an important part of a healthy lifestyle. This study aims to find out what factors are related to physical activity in pregnant women. This research was a quantitative study using a cross-sectional design. This research was conducted offline using a questionnaire sheet and Google form. The sampling technique used Convenience Sampling, with a total of 130 pregnant women with the criteria of pregnant women who can communicate well, own a smartphone, and read also write. Data were analyzed using linear regression with a significance level of p<0.05. Most of the respondents (62.3%) have physical activity in the moderate category. Age, gestational age, parity, and BMI were not significantly related to physical activity in pregnant women. However, education and occupational levels are significantly related to physical activity in pregnant women. Some pregnant women already have good awareness and knowledge of doing physical activity, but some are still in the mild category. So, physical activity in pregnant women still needs to be improved.

Kata Kunci:
Aktifitas Fisik_1
Ibu Hamil_2
Faktor Dominan_3
Pekerjaan_4
Tingkat Pendidikan_5

A B S T R A K

Physical activity pada ibu hamil masih rendah di Indonesia, padahal melakukan physical activity pada saat hamil itu banyak manfaat untuk kesehata dan merupakan salah satu bagian penting dari gaya hidup yang sehat. Penelitian ini bertujuan untuk mengetahui apa saja faktor – faktor yang berhubungan dengan physical activity pada ibu hamil. Penelitian ini merupakan penelitian kuantitatif dengan menggunakan desain cross sectional. Penelitian ini dilakukan secara offline dengan menggunakan lembar kuesioner dan google form. Teknik pengambilan sampel menggunakan Convenience Sampling, dengan jumlah 130 ibu hamil dengan kriteria ibu hamil yang bisa berkomunikasi dengan baik, memiliki smartphone dan bisa baca tulis. Data dianalisis menggunakan linear regressesion dengan tingkat signifikasi p<0,05. Sebagian besar reesponden (62.3%) memiliki physical activity pada kategori aktif sedang. Usia, usia kehamilan, paritas dan BMI tidak berhubungan secara signifikan dengan physical activity pada ibu hamil. Namun, tingkat pendidikan dan pekerjaan berhubungan secara signifikan dengan physical activity pada ibu hamil. Sebagian ibu hamil telah memiliki kesadaran dan pengetahuan yang baik dalam melakukan physical activity, namun sebagian lainnya masih ada

		pada kategori aktif ringan. Sehingga, physical activity pada ibu hamil masih perlu untuk ditingkatkan.

BACKGROUND

Physical activity can provide many health benefits at every stage of life, such as improving quality of life, mood, and other health benefits. Some opinions say that lack of physical activity can cause problems with the placenta, weight gain in the mother, increase the risk of premature birth, stunted growth and development, and even miscarriage (Ariska & Marfuah, 2019). There are several problems in pregnancy due to lack of physical activity, such as the occurrence of preeclampsia because it makes blood pressure rise, and makes low birth weight in the baby. The prevalence (Todorovic et al., 2020). In Previous study declared that physical activity was lower during pregnancy compared to before pregnancy, because half of women stopped physical activity due to pregnancy (López-Gil et al., 2022). According to the American College of Obstetricians and Gynecologists (ACOG), states that all pregnant women without medical contraindications can do physical activity within 30 minutes per day with moderate intensity. According to the Canadian Society of Gynaecology and Obstetricians, Physical Activity can be done by pregnant women for 150 minutes in one week suggests several benefits (Todorovic et al., 2020). Physical Activity during pregnancy, such as relieving lower back pain which is very commonly felt by almost 60% of Pregnant women Rahayu (Widiarti & Yulviana, 2021), decreases the likelihood of cesarean delivery, have a lower chance of experiencing depression and anxiety. Some factors related to physical activity from the results of the previous study declared that the mother as a housewife and multigravidarum states were affecting physical activity during pregnancy (Hailemariam et al., 2020).

The number of pregnant women in Indonesia is quite high, in West Java alone the number of pregnant women in 2021 reached 897,216 people. Pregnant women are known to rarely and reluctantly do physical activity associated with changes that occur both physiologically and psychologically. Which makes the mother hampered in doing physical activity. The prevalence of

PA in pregnant women in Indonesia was recorded in 2018 the lack of physical activity increased from 26.1% to 33.5% (Kemenkes RI, 2022).

Research about factors associated with physical activity in pregnant women in Indonesia is still little found, even though in previous studies physical activity in pregnant women was important. According to research Todorovic et al., (2020) and other studies, many are in the first and second trimester pregnant women only. Therefore, this research will be conducted on pregnant women in the first, second, and third trimesters, because based on data from the study, fewer third-trimester pregnant women do physical activity, the reason is that they prefer to do light housework and do not want to do physical activities that require more energy. Therefore, researchers are interested in researching Factors Associated with Physical Activity in Pregnant Women. This research aims to find out what are the factors associated with Physical Activity in pregnant women.

METHOD

This type of research uses quantitative methods with a cross-sectional study design. This research will be conducted on pregnant women with inclusion criteria: pregnant women in all trimesters and can communicate well. The sampling technique used convenience sampling. The total of samples was accounted by G-Power Software version 3.1.9.7 with F-Test, Linear multiple regression: Fixed model, R2 deviation from zero with effect size f2 0.15, α err prob 0.05, Prower (1 – β err prob) 0.80, and at number of prediction was 10 obtained 118 added 10%, so total samples were 130 pregnant women.

The instruments in this study were data demographics questionnaires to collect age, education, occupation, and marital status data of respondents, and the PPAQ (Pregnancy Physical Activity Questionnaire) instrument to measure physical activity during pregnant women. This PPAQ can measure the type, duration and frequency of physical activity carried out by pregnant women within 7 days in various conditions such as sports, household, work, and transportation activities. The unit of value in physical activity is using MET-hours/week. Answers are scored for duration and specific MET scores according to the question and answer. The guideline for calculating its score: the questions: 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 20, 21, 22 with Duration value: 0, 0.25, 0.75, 1.5, 2.5, 3.0. Then, multiply

the value by 7 days per week. The questions: 12, 13, 32, 33, 34, 35, 36 with duration value: 0, 0.25, 1.25, 3.0, 5.0, 6.0. Then, multiply the value by 7 days per week. the questions: 17, 18, 19, 23, 24, 25, 26, 27, 28, 29, 30, 31 with duration value: 0, 0.25, 0.75, 1,5, 2,5, 3.0. The reliability test of PPAQ has an r value of 0.08 to 0.43 for total activity, r 0.10 to 0.42 for work activity, and r 0.30 – 0.48 for sports activity (Papazian et al., 2020).

Univariate data analysis was carried out to get an overview of each independent variable including age, education level, occupation, gestational age, parity, and BMI as well as the dependent variable namely physical activity in pregnant women. Bivariate analysis using the Pearson test to determine whether there is a relationship between age, work, gestational age, parity, and body mass index with physical activity in pregnant women. Bivariate analysis using the Spearman test to determine whether there is a relationship between education level and physical activity in pregnant women. multivariate analysis using Linear regression test to find out what factors are related to pregnant women.

This study considered the ethics of research such as anonymity, confidentiality, justice, beneficence, non-maleficence, and veracity. this study also had accepted ethical approval from Nursing School of PPNI, West Java with No. III/030/KEPK-SLE/STIKEP/PPNI/JABAR/VI/2023.

RESULT

Univariate analysis

Characteristics Respondents based on demographic data

Univariate analysis can also be called a descriptive statistical test or frequency distribution where the purpose is to explain or describe the characteristics of data.

Based on table 1, shows that the age of most pregnant women is at the age of 20-35 years as many as 109 respondents (83.8%). At the education level, it shows that most pregnant women take high school graduation education as many as 75 respondents (57.7%). In employment, it was found that the most pregnant women were not working with 87 respondents (66.9%). At gestational age, it showed that pregnant women with the third trimester with a total of 53 respondents (40.8%). At parity, it was found that the most pregnant women with multigravida (had given birth) with 83 respondents (63.8%). In BMI it was found that as many as 72 (55.4%) pregnant women had a BMI of >25.

Table 1. Characteristics Respondents Based on Demographic Data

Variable	Mean ± SD	Min	Max
Age	28.51 ± 5.396	20	42

Variable	F	(%)
Age		
< 20	3	2.3
20 – 35	109	83.8
> 35	18	13.8
Education Level		
Elementary School	3	2.3
Junior high school	24	18.5
Senior High School	75	57.7
College	28	21.5
Occupation		
No Work	87	66.9
Work	43	33.1
Gestational Age		
First Trimester	44	33.8
Second Trimester	33	25.4
Third Trimester	53	40.8
Parity		
Primigravida	47	36.2
Multigravida	83	63.8
BMI		
< 18.5	8	6.2
18.5 – 24.9	50	38.5
> 25	72	55.4

Source: Primary data

Description of Physical Activity in Pregnant Women

Table 2. Description of Physical Activity in Pregnant Women

Variable	Frequency	Percentage (%)
Inactive	1	0.8
Light	44	33.8
Moderate	81	62.3
Vigorous	4	3.1
Total	130	100

Source: Primary data

Based on the table above, the picture of physical activity in pregnant women shows that most or as many as 81 respondents (62.3%) do physical activity in the moderate category, and as for 1 respondent is not active in doing physical activity.

Bivariate Analysis

Bivariate analysis in this study to determine the relationship between age and physical activity in pregnant women, the relationship between education level and physical activity in pregnant women, the relationship between work and physical activity in pregnant women, the relationship between gestational age and physical activity in pregnant women, the relationship between parity with physical activity in pregnant women, and the relationship between BMI and physical activity in pregnant women.

Table 3. Bivariate Analysis

Variable	Coefficient	P-value
Usia	0.068	0.443
Education	0.215	**0.014**
Level	0.821	**0.000**
Occupation	-0.118	0.180
Gestational Age	0.074	0.404
Parity	0.053	0.550
BMI		

Source: Primary data

Based on the table of bivariate analysis results was found that in the independent variable age with physical activity showed a coefficient of 0.068 and a p-value of 0.443 ($p<0.05$), it showed no significant relationship between age and physical activity in pregnant women. At the education level, it showed a coefficient of 0.215 and a p-value of 0.014 ($p<0.05$), so it shows a significant

relationship between the level of education and physical activity in pregnant women. In the occupational variable showed a coefficient of 0.821 and a p-value of 0.000 (p<0.05), it shows a significant relationship between work and physical activity in pregnant women. At gestational age. At gestational age showed a coefficient of –-0.118 and a p-value of 0.180 (p<0.05), so there was no significant relationship between gestational age and physical activity in pregnant women. In parity shows a coefficient of 0.074 and a p-value of 0.404 (p<0.05), it shows no significant relationship between parity and physical activity in pregnant women. BMI shows a coefficient of 0.053 and a p-value of 0.550 (p<0.05) which means that there is no relationship between BMI and physical activity in pregnant women.

Multivariate Analysis

Table 4. Multivariate Analysis Linear Regression

Variable	T	p-value
Education Level	2.515	0.013
Occupation	3.961	0,000

Source: Primary data

Based on the table above using linear regression showed that the level of education and employment shows significant results with a p-value of <0.05.

DISCUSSION

Description of Physical Activity in Pregnant Women

Based on the results of this study, showed that most pregnant women do physical activity with a moderate category with 81 (62.3%) respondents. This is in line with other studies conducted by most pregnant women doing physical activity in the moderate category as many as 63 (56.8%) respondents (Todorovic et al., 2020).

The Relationship of Demographic Data Characteristics with Physical Activity in Pregnant Women

a. The relationship between age and physical activity in pregnant women

   Based on the results of bivariate analysis in Table 3, a p-value of 0.443 was obtained which showed that there was no significant relationship between age and physical activity. Other studies conducted also showed that there was no significant relationship between age and physical activity in pregnant women. The age of <25 years is one of the important factors in doing physical activity, and also statistical test results showed no significant relationship between age and physical activity (Hailemariam et al., 2020).

In the results of multivariate analysis, age variables on physical activity do not have a significant relationship, in other words, age does not affect physical activity. This happened because of the age of the respondents in this study.

b. The relationship between education level and physical activity in pregnant women

The results of bivariate analysis in this study using Spearman correlation showed that there was a significant relationship between the level of education and physical activity in pregnant women with a p-value of 0.044. In another study, it is stated that the level of education is one of the important factors for understanding knowledge in doing physical activity during pregnancy. Most pregnant women with a high level of education have extensive knowledge about the importance of doing physical activities during pregnancy, this is also influenced by the socio-economic and environmental owned by pregnant women. So it can be concluded that the level of education is important in the knowledge and understanding of physical activity in pregnant women.

c. The relationship between occupation and physical activity in pregnant women

This study showed that the results of bivariate analysis using Pearson Correlation showed a significant relationship between occupation and physical activity in pregnant women. This is in line with research conducted by those who say that there is a significant relationship between occupation and physical activity with a p-value of 0.044 (Harrison et al., 2018; Miranda et al., 2022). Mother as housewives or households tends to have light to less sedentary activity especially at the afternoon than mothers who work at the office (Steeves et al., 2015).

d. The relationship between gestational age and physical activity in pregnant women

Based on the results of research using Spearman regression shows no significant relationship between gestational age and physical activity in pregnant women. This study is in line with research conducted by those who say that there is no significant relationship between gestational age and physical activity in pregnant women. However, research states that there is a significant relationship

because the higher the gestational age, the higher the pregnant women in doing physical activity (Miranda et al., 2022). Kind of delivery is one of the fears of childbirth among pregnant women. So, most of them do physical activity to support her spontaneous delivery (Julianti et al., 2023).

e. The relationship of parity with physical activity in pregnant women
   Based on the results of bivariate analysis using Spearman correlation shows that there is no significant relationship between parity and physical activity in pregnant women. This is in line with research that says that the more children born, pregnant women tend to do less physical activity because they are too tired to do it (Attallah et al., 2022; Todorovic et al., 2020).

f. The relationship between BMI and physical activity in pregnant women
   Based on the results of bivariate analysis, the results showed that there was no significant relationship between BMI and physical activity in pregnant women. This is in line with previous research conducted, which states that the higher the BMI, will change the posture of pregnant women which makes it difficult for pregnant women to move and difficult to do physical activity (Gebregziabher et al., 2019).

Factors related to physical activity in pregnant women

Based on the results of multivariate analysis using linear regression showed the results of variables related to physical activity in pregnant women, namely the level of education with a p-value of 0.013 ($p < 0.05$), it can be concluded that the level of education is related to physical activity in pregnant women. In addition to education level, work also has a significant relationship with physical activity in pregnant women with a p-value of 0.000 (<0.005).

CONCLUSION

Based on the research and discussion in the previous chapter, it can be concluded, that the level of education with a p-value of $0.013 \leq 0.05$ which showed that there was a relationship between the level of education and physical activity in pregnant women. The occupation with a p-value of $0.000 \leq 0.005$ showed that there was a relationship between work and physical activity in pregnant women. The results of multivariate analysis showed that the occupational variable was the factor most related to physical activity

in pregnant women with a p-value of 0.000 (≤0.05). The result of the study will be a reference and source of reading for readers and for further researchers can further develop factors related to physical activity in pregnant women.

REFERENCES

Ariska, S., & Marfuah, D. (2019). The description of problems correlated to pregnancy. *KnE Life Sciences*, 463–475. https://doi.org/https://doi.org/10.18502/kls.v4i13.527

Attallah, S., Hermawati, D., & Rizkia, M. (2022). Gambaran Aktivitas Fisik dan Risiko Preeklampsia Pada Ibu Hamil. *Jurnal Ilmiah Mahasiswa Fakultas Keperawatan*, *6*(3).

Gebregziabher, D., Berhe, H., Kassa, M., & Berhanie, E. (2019). Level of physical activity and associated factors during pregnancy among women who gave birth in Public Zonal Hospitals of Tigray. *BMC Research Notes*, *12*, 1–6. https://doi.org/https://doi.org/10.1186/s13104-019-4496-5

Hailemariam, T. T., Gebregiorgis, Y. S., Gebremeskel, B. F., Haile, T. G., & Spitznagle, T. M. (2020). Physical activity and associated factors among pregnant women in Ethiopia: facility-based cross-sectional study. *BMC Pregnancy and Childbirth*, *20*, 1–11. https://doi.org/https://doi.org/10.1186/s12884-020-2777-6

Harrison, A. L., Taylor, N. F., Shields, N., & Frawley, H. C. (2018). Attitudes, barriers and enablers to physical activity in pregnant women: a systematic review. *Journal of Physiotherapy*, *64*(1), 24–32. https://doi.org/https://doi.org/10.1016/j.jphys.2017.11.012

Julianti, P. A., Marfuah, D., Mutiar, A., & Purnama, H. (2023). Fear of Childbirth pada Ibu Hamil Beresiko. *Edu Dharma Journal: Jurnal Penelitian Dan Pengabdian Masyarakat*, *7*(2), 122–133. https://doi.org/http://dx.doi.org/10.52031/edj.v7i2.608

Kemenkes RI. (2022). *Perubahan Fisik dan Psikis Pada Ibu Hamil*. Kemenkes Direktorat Jenderal Pelayanan Kesehatan. https://yankes.kemkes.go.id/view_artikel/280/perubahan-fisik-dan-psikis-pada-ibu-hamil

López-Gil, J. F., Izquierdo, M., García-Hermoso, A., Alonso-Martínez, A. M., Rincón-Pabón, D., Morales-Osorio, M. A., & Ramírez-Vélez, R. (2022). Factors associated with meeting the WHO physical activity recommendations in pregnant Colombian women. *Scientific Reports*, *12*(1), 19500. https://doi.org/https://doi.org/10.1038/s41598-022-23947-7

Miranda, L. A., Moura, A. C. R. de, Kasawara, K. T., Surita, F. G., Moreira, M. A., & Nascimento, S. L. do. (2022). Exercise and physical activity levels and associated factors among high-risk pregnant women. *Revista Brasileira de Ginecologia e Obstetrícia*, *44*, 360–368. https://doi.org/https://doi.org/10.1055/s-0042-1743099

Papazian, T., El Osta, N., Hout, H., Chammas, D. El, El Helou, N., Younes, H., Abi Tayeh, G., & Rabbaa Khabbaz, L. (2020). Pregnancy physical activity

questionnaire (PPAQ): Translation and cross cultural adaption of an Arabic version. *Plos One*, *15*(3), e0230420. https://doi.org/https://doi.org/10.1371/journal.pone.0230420

Steeves, J. A., Murphy, R. A., Zipunnikov, V., Strath, S. J., & Harris, T. B. (2015). Women workers and women at home are equally inactive: NHANES 2003–2006. *Medicine and Science in Sports and Exercise*, *47*(8), 1635. https://doi.org/https://doi.org/10.1249/MSS.0000000000000582

Todorovic, J., Terzic-Supic, Z., Bjegovic-Mikanovic, V., Piperac, P., Dugalic, S., & Gojnic-Dugalic, M. (2020). Factors associated with the leisure-time physical activity (LTPA) during the first trimester of the pregnancy: the cross-sectional study among pregnant women in Serbia. *International Journal of Environmental Research and Public Health*, *17*(4), 1366. https://doi.org/https://doi.org/10.3390/ijerph17041366

Widiarti, I. R., & Yulviana, R. (2021). Pendampingan Senam Hamil pada Ibu Hami Trimester III untuk Mengurangi Nyeri Punggung di PMB Rosita, S. Tr, Keb Tahun 2021. *Jurnal Kebidanan Terkini (Current Midwifery Journal)*, *1*(2), 153–160. https://doi.org/10.25311/jkt/vol1.iss2.463