HEALTH-RELATED QUALITY OF LIFE OF PREGNANT WOMEN DURING THE COVID-19 PANDEMIC

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ABSTRACT

Pregnancy causes a partial decrease in immunity due to physiological changes related to pregnancy so that pregnant women are more susceptible to viral infections. The COVID-19 pandemic has changed people's habits, including pregnant women. These changes affect the quality of life-related to physical and mental health. The objective of this study was to explore the health-related quality of life among pregnant women during the COVID-19 pandemic conducted between June - July in Tapian Dolok subdistrict, Simalungun, North Sumatra, Indonesia. This research uses the descriptive method. The sample of this study was pregnant women 18-45 years, all of the gestational ages, and participants were read and speak well in Indonesian fluently. The sample size of this study was 87 participants. Simple random sampling was used in this research. Health-related quality of life was measured using a health survey short form 12 (SF-12) questionnaire. To calculate the PCS and MCS scores using a web-based scoring tool (www.orthotoolkit.com/sf12/). The mean age of respondents was 27.54 ± 4.89 years, the mean gestational age was 25.89 ± 8.09 weeks, multigravida was 71.3%, and higher education level was 74.71%. The mean Physical Component Score (PCS) was 40.74 ± 7.04 and Mental Component Score (MCS) 49.93 ± 8.77. It needs to be proper education about Covid-19 for pregnant women to improve their physical and mental health.

Keywords: COVID-19; health-related quality of life; pregnant women

INTRODUCTION

Pregnant women and their fetuses are a high-risk population during outbreaks of infectious diseases, including COVID-19 (WHO, 2020). Pregnancy causes a partial decrease in immunity due to pregnancy-related physiological changes so that pregnant women are more susceptible to viral infections (Lee et al., 2020). The COVID-19 pandemic has changed people's habits, including pregnant women. These changes affect the quality of life-related to physical and mental health. During the COVID-19 pandemic, the quality of life also experienced moderate disturbances due to unemployment (Samlani et al., 2020). Restrictions on social activities, wearing masks, keeping a distance, and washing hands are fundamental changes related to habits that affect the quality of life during a pandemic (Fikadu et al., 2021). Activity restrictions lead to reduced daily physical activities (Biviá-Roig et al., 2020).

After the pandemic, people have become more aware of their health, especially mental health. The impact of COVID-19 on mental health remains a concern. Zhang et al. found that 67.7% of respondents reported they paid more attention to their mental health after the pandemic (Zhang Y & Ma Z, 2020). The Covid-19 pandemic has led to increased anxiety and depression in pregnant women (Corbett et al., 2020). Mental health is a crucial factor in maternal health and fetal development (Khatri et al., 2019). The aim of this study is to explore the health-related quality of life in pregnant women during the COVID-19 pandemic in Tapian Dolok District, Simalungun, North Sumatra, Indonesia.

METHODS

Study design and participants

The design of this study was descriptive to explore the health-related quality of life in pregnant women during the COVID-19 pandemic. This study was conducted in June-July 2021 in Tapian Dolok Subdistrict, Simalungun Regency, North Sumatra, Indonesia. The participants of this study were 87 pregnant women in all trimesters. Simple random sampling was done in this study. The sample size in this study was calculated based on the single sample size formula for the average estimate with absolute accuracy (Lemeshow et al., 1990), the standard deviation obtained from previous research (Fátimah Alaya et al., 2021) namely:

$$n = \frac{(Z\alpha \times s)^2}{d^2} = \frac{(1.96 \times 9.5)^2}{2^2} = 86.67$$

Based on this formula, there were 87 participants were obtained.

Data collection

Health-related quality of life (HRQOL) was collected using the Short-Form Health Survey (SF-12) questionnaire developed by Ware et al. (1996). This questionnaire has been validated in Indonesian version in a previous study (Arovah & Heesch, 2021) with PCS internal consistency=0.72 and MCS =0.73; root means square error of approximation [RMSEA] = 0.08. This questionnaire consists of 12 items covering eight subscales, including physical functioning (PF; two items), role limitations due to physical problems (Role-Physical; two items), bodily pain (BP; one item), general health (GH; one item), vitality (VT; one item), social functioning (SF; one item), role limitations due to emotional problems (Role-Emotional/RE; two items), and perceived mental health (Mental Health; two items). In addition to the eight subscales, this questionnaire also covers overall physical (Physical Component Summary) and mental (Mental Component Summary) quality of life. We used Online SF-12 Score Calculator-OrthooToolKit (http://orthotoolkit.com/sf-12/) to calculate the quality of life. In this study, we used the US version for the assessment. Physical and mental health was categorized as 'good' if the score obtained was above the average value (50) and 'impaired' if the score obtained was below the average value (50).

Data analysis

Processing and analyzing data using Statistical Package and Service Solution (SPSS) version 25.0 for Windows. Data were presented in percentage.

RESULT

The mean age of the participants was 27.54 ± 4.89 years, the mean gestational age was 25.89 ± 8.09 weeks, the most of the participants were multigravida (71.3%), graduated from senior high school (66.7%), and housewives (93.1%). The characteristics of participants were presented in table 1.

Table 1. Characteristics of participants

Variable	Mean ± SD (n=100)	f (%)
Age (years)	27.54 ± 4.89	
Gestational age (weeks)	25.89 ± 8.09	
Gravida	2.28 ± 1.18	
Gravida		
- Primigravida		25 (28.7)
- Multigravida		62 (71.3)
Education		
- Elementary school		4 (4.6)
- Junior High School		18 (20.7)
- Senior High School		58 (66.7)
- University/Diploma		7 (8)
Job status		
- Housewife		81 (93.1)
- work		6 (6.9)

SD= Standard deviation

Table 2. Frequency distribution of health survey SF-12 short form

Item	Question	Scale	Item response frequency (%)					
			1	2	3	4	5	6
Q1	Health rating in general	GH	3.4	26.4	64.4	4.6	1.1	NA
Q2	Limitations in moderate physical activities	PF1	31	34.5	34.5	NA	NA	NA
Q3	Limitations in climbing several flights of stairs	PF2	31	46	23	NA	NA	NA
Q4	Accomplished less because of physical health	RP1	44.8	55.2	NA	NA	NA	NA
Q5	Limited in work or activities because of physical health	RP2	59.8	40.2	NA	NA	NA	NA

Q6	Accomplished less as a result of emotional problems	RE1	50.6	49.4	NA	NA	NA	NA
Q7	Not careful in work or activities as a result of emotional problems	RE2	40.2	59.8	NA	NA	NA	NA
Q8	How much did pain interfere with work inside and outside the home?	BP	18.4	33.3	40.2	6.9	1.1	NA
Q9	How much of the time did you feel calm and peaceful?	MH1	32.2	36.8	13.8	11.5	4.6	1.1
Q10	How much of the time did you have a lot of energy?	VT	21.8	26.4	32.2	9.2	8.0	2.3
Q11	How much of the time did you feel downhearted and blue?	MH2	2.3	9.2	16.1	8.0	27.6	36.8
Q12	How much of the time did physical health or emotional	SF	2.3	8	18.4	48.3	23	NA

GH, general health; PF, physical functioning; RP, role-physical; RE, role- emotional; BP, bodily pain; MH, mental health; VT, vitality; SF, social functioning; NA, not applicable.

Table 3. Frequency distribution of health survey SF-12 scale

Scale	Mean ± SD	f (%)
Physical component summary	40.74 ± 7.04	
Mental compoenent summary	49.93 ± 8.77	
Physical component summary		
- good		7 (8)
- impaired		80 (92)
Mental component summary		
- good		45 (51.7)
- impaired		42 (48.3)

SD= Standard deviation

Based on table 3, it is known that the average quality of life-related to the health of the participants is in the impaired category, even though the participants' mental health is slightly better than their physical health.

DISCUSSION

This study's aim was to explore the health-related quality of life in pregnant women during the COVID-19 pandemic. In general, the quality of life related to the health of pregnant women in this study was in the impaired category, with the physical and mental component score of 40.74 ± 7.04 and 49.93 ± 8.77, respectively. In general, health-related quality of life during the COVID-19 pandemic decreased, as reported by Samlani et al. in Morocco with a PCS score of 36.10 ± 5.82 and MCS 34.49 ± 6.44 (Samlani et al., 2020). Hawash et al. in KSA also found the same thing with a PCS score of 41.65 ± 11.82 and an MCS score of 32.34 ± 25.30 (Hawash et al., 2021). A higher score (above the average of 50) indicates a better quality of life/mental health. Previous research conducted in Spain also found a decrease in the quality of life of pregnant women during the COVID-19 pandemic. It was correlated with changes in the physiology of pregnancy itself which are exacerbated by situations of stress and anxiety during social distancing during a pandemic (Biviá-Roig et al., 2020). The decline in physical health is thought to be related to activity restrictions during the pandemic. As reported by Biviá-Roig et al., 2020 there was a 30% decrease in moderate physical activity in pregnant women during the quarantine period. Alaya et al's research stated that there was no difference in mental health in pregnant women with COVID 19 and non-COVID 19 pregnant women. Alaya et al suspected that mental health had nothing to do with infection. Mental health may relate to the social, cultural and health service environment (Fátimah Alaya et al., 2021).

The results of this study were different from the research in Iran conducted in May – June 2020 by Mirzaei et al. In this study, it was found that the mental health of pregnant women was better with a mean score of MCS was 67.31±13.53 (Mirzaei et al., 2021). Various things can cause a decline in mental health during a pandemic, including the economic impact due to quarantine, an unpredictable future, and worry about the health of the fetus (Mirzaei et al., 2021). Stress is a mental health problem that is commonly encountered in pregnant and lactating women during the COVID-19 pandemic (Demissie & Bitew, 2021). The mental health effects of the COVID-19 pandemic on pregnant women seem to be a concern for policymakers and health planners in providing maternal welfare services during and after this global crisis. It aims to improve the welfare of pregnant women (Demissie & Bitew, 2021).

CONCLUSION AND RECOMMENDATION

Most of the quality of life-related to the health of pregnant women during this pandemic was in the poor range, indicated by PCS and MCS below the average score. Education about physical health and psychological support for pregnant women is also needed to reduce the long-term effects of this pandemic. Further research is needed to find factors that affect health-related quality of life during the COVID-19 pandemic.

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CONFLICT OF INTEREST

There is no conflict of interest in this research.

REFERENCE

Alaya, Fátimah, Worrall, A. P., Toole, F. O., Doyle, J., Duffy, R. M., & Geary, M. P. (2021). Health-related quality of life and quality of care in pregnant and postnatal women during the coronavirus disease 2019 pandemic: A cohort study. *Int J Gynecol Obstet*, *154*, 100–105. https://doi.org/10.1002/ijgo.13711

Arovah, N. I., & Heesch, K. C. (2021). Assessment of the validity and reliability of the Indonesian version of Short Form 12 (SF-12). *J Prev Med Hyg*, *62*, E421–E429.

Biviá-Roig, G., La Rosa, V. L., Gómez-Tébar, M., Serrano-Raya, L., Amer-Cuenca, J. J., Caruso, S., Commodari, E., Barrasa-Shaw, A., & Lisón, J. F. (2020). Analysis of the impact of the confinement resulting from covid-19 on the lifestyle and psychological wellbeing of spanish pregnant women: An internet-based cross-sectional survey. *International Journal of Environmental Research and Public Health*, *17*(16), 1–14. https://doi.org/10.3390/ijerph17165933

Corbett, G. A., Milne, S. J., Hehir, M. P., Lindow, S. W., & O'Connell, M. P. (2020). HEALTH ANXIETY AND BEHAVIOURAL CHANGES OF PREGNANT WOMEN DURING THE COVID-19 PANDEMIC. *European Journal of Obstetrics & Gynecology and Reproductive Biology*, *249*, 96–97.

Demissie, D. B., & Bitew, Z. W. (2021). Mental health effect of COVID-19 pandemic among women who are pregnant and/or lactating: A systematic review and meta-analysis. *SAGE Open Medicine*, *9*, 205031212110261. https://doi.org/10.1177/20503121211026195

Fikadu, Y., Yeshaneh, A., Melis, T., Mesele, M., Anmut, W., & Argaw, M. (2021). Covid-19 preventive measure practices and knowledge of pregnant women in guraghe zone hospitals. *International Journal of Women's Health*, *13*, 39–50. https://doi.org/10.2147/IJWH.S291507

Hawash, M. M., Alhazmi, A. H., Wafik, W., Muzammil, K., Mushfiq, S., & Ahmed, H. A. (2021). The Association of COVID-19 Pandemic Stress With Health-Related Quality of Life in the Kingdom of Saudi Arabia: A Cross-Sectional Analytical Study. *Frontiers in Public Health*, *9*(March), 1–9. https://doi.org/10.3389/fpubh.2021.600330

Khatri, G. K., Tran, T. D., & Fisher, J. (2019). Prevalence and determinants of symptoms of antenatal common mental disorders among women who had recently experienced an earthquake : a systematic review. *BMC Psychiatry*, *19*(47).

Lee, R. W. K., Loy, S. L., Yang, L., Chan, J. K. Y., & Tan, L. K. (2020). Attitudes and precaution practices towards COVID-19 among pregnant women in Singapore: a cross-sectional survey. *BMC Pregnancy and Childbirth*, *20*(1), 1–11. https://doi.org/10.1186/s12884-020-03378-w

Lemeshow, S., Hosmer, D. W., Klar, J., & Lwanga, S. K. (1990). Adequacy of Sample Size in Health Studies. In *John Wiley & Sons Ltd.* John Wiley & Sons Ltd.

Mirzaei, N., Jahanian Sadatmahalleh, S., Bahri Khomami, M., Moini, A., & Kazemnejad, A. (2021). Sexual function, mental health, and quality of life under strain of COVID-19 pandemic in Iranian pregnant and lactating women: a comparative cross-sectional study. *Health and Quality of Life Outcomes*, *19*(1), 1–8. https://doi.org/10.1186/s12955-021-01720-0

Samlani, Z., Lemfadli, Y., Errami, A., Oubaha, S., & Krati, K. (2020). The impact of the COVID-19 pandemic on quality of life and well-being in Morocco. *Arch Community Med Public Health*, *6*(2), 130–134. https://doi.org/10.17352/2455-5479.000091

Ware, J. E., Kosinski, M., & Keller, S. D. (1996). A 12-Item Short-Form Health Survey: Construction of Scales and Preliminary Tests of Reliability and Validity. *Medical Care*, *34*(3), 220–233. https://doi.org/10.1097/00005650-199603000-00003

WHO. (2020). *COVID-19 AND PREGNANCY Interim Guidance*.

Zhang Y, & Ma Z. (2020). Impact of the COVID-19 pandemic on mental health and quality of life among local residents in Liaoning Province, China: A cross-sectional study. International Journal of Environmental Research and Public Health [revista en Internet] 2020 [acceso 8 de octu. *International Journal of Environmental Research and Public Health*, *17*(2381). https://doi.org/10.3390/ijerph17072381