Scientia Psychiatrica

Journal Homepage: www.scientiapsychiatrica.com

eISSN (Online): 2715-9736

Association between Physical Activity and Postnatal Depression

Abi Rafdi[1*]

[1] Specialized Residency Training, Department of Obstetrics and Gynecology, Faculty of Medicine, Universitas Sriwijaya/Dr. Mohammad Hoesin General Hospital, Palembang, Indonesia

ARTICLE INFO

Keywords:
Postpartum depression
Puerperium
Pregnancy
Physical activity

***Corresponding author:**
Abi Rafdi

E-mail address:
abirafdi1996@gmail.com

The author has reviewed and approved the final version of the manuscript.

https://doi.org/10.37275/scipsy.v3i1.67

A B S T R A C T

Many changes could occur in a woman's body, both mental and physical, during pregnancy and the postnatal period. The process of childbirth and a changing role as a new mom can be associated with many disturbances of emotions. Besides that, the development of baby blues or postpartum depression may occur in the puerperium period. Depression in postpartum occurs in one month after childbirth and may be prolonged to one year. Depressive disorders in a young mother affect the mother and the newborn's health status. That is why it is crucial to identify for factors that could significantly reduce the likelihood of developing depression in this period. The literature review was aimed at describing the relationship of physical activity during pregnancy and postpartum and the development of postnatal depression. It was shown that physical activity during pregnancy and puerperium, or in the postnatal period itself reduces the risk of developing depression in pregnancy and after delivery. Physical activity can be an essential factor in preventing depressive disorders in women in the postnatal period.

1. Introduction

Pregnancy is a period in a women's life that included multiple hormonal factors, and physiologic and biomechanical changes. For women experiencing a healthy pregnancy, regular physical activity has been recommended during pregnancy and postpartum by the American College of Obstetricians and Gynecologists (ACOG). Physical activity can prevent depression in a pregnant woman. Stress associated with caring for a child and the lack of body acceptance after childbirth can also cause depression in women.[1,2]

Baby blues syndrome may develop four days after birth and last up to 12 days, affecting 15.3% of mothers. Baby blues syndrome is a risk factor for postpartum depression. Postpartum depression is a mental disorder that develops within one month after childbirth. Postpartum depression happened in 20% of women's postpartum period. Anxiety, hopelessness, insomnia, and loss of interest in the child are the main symptoms of postpartum depression. Besides, a suicidal idea may occur in severe cases. Postpartum depression lasts from three to nine months, sometimes up to one year after the child's birth. Depressive disorders in the postnatal period may harm the development of the mother-child relationship.[1-4]

Hormonal changes during delivery and postpartum may result in postnatal depression. Between the first and second stages of childbirth, progesterone concentration drops significantly, while estrogen level decreases after the expulsion of the placenta. Estrogen affects serotonin and dopamine levels due to the

decrease in its concentration and harms psychological well-being. Besides, insufficient levels of estrogen and progesterone affect the development of anxiety disorders.[1-2]

Physical activity has a significant impact on pregnant women's physical and mental states. The previous study showed that regular moderate-intensity PA throughout pregnancy is detrimental to fetal development or raises maternal core body temperature sufficiently to impose risk. Despite the documented 'teachable moment' of pregnancy with increased motivation for healthy lifestyle behaviors, pregnancy is usually associated with decreased levels of PA. Concerns about safety and potential adverse effects on the developing fetus and changing body shape, tiredness, and time constraints are commonly cited barriers to regular activity during pregnancy. The literature review aims to describe the relationship between physical activity and postpartum depression.

Exercises during pregnancy and postnatal

According to the ACOG (American College of Obstetricians and Gynecologists) recommendation, new mothers should practice exercise after childbirth as soon as possible and whenever it is safe. There is considerable evidence that physical activity can reduce the risk of developing depression in adult populations. The potential underlying mechanisms by which exercise may protect against depression are not entirely clear from the literature. It has been suggested that the neurobiological antidepressant effects of exercise play a prominent role in inducing both acute and chronic responses.[3-5] Exercises increase the concentration of neurotransmitters such as 5HT, dopamine, and noradrenaline. In addition, physical activity increases the secretion of BDNF (a neurotic factor produced in the brain), the concentration of which is low in people with depression. This factor plays a vital role in the human body because it is responsible for neuroprotection, neurogenesis, and synaptic plasticity. Exercises also increase cortisol levels. Corticosteroids are responsible for stimulating the endocannabinoid system, which affects the action of such neurotrophins as BDNF. Exercise also stimulates the production of GH (growth hormone) and IGF-1 (insulin-like growth hormone). GH and IGF-1 are responsible for the regulation of sleep, cognitive function, and mood. Moreover, it has been observed that in depression, there is an increase in the production of inflammatory cytokines, the concentration of which can also be reduced by regular physical activity.[6-8]

The influence of physical activity during pregnancy on the occurrence of depressive disorders in pregnancy and puerperium was also examined by Songøygard et al. There were no statistically significant differences in the event of postnatal depression between the control and intervention groups. However, a lower rate of depression was observed among women who were not physically active before the project started and included in the intervention group compared to those in the control group. Lower levels of postnatal depression in physically active women in the aquatic environment during pregnancy were also observed in their studies by Aguilar-Cordero et al.[8,9] However, this result was not obtained among women performing stretching exercises. On the other hand, Okyay et al. showed that physical activity minimizes the risk of developing postnatal depression and significantly improves the quality of life of women in childbirth. The positive effect of 30 min training conducted five times a week on depression was also noted by Lewis et al. A similar dependency was not demonstrated by Daley et al. and Forsyth et al. in which women were to be physically active for 105 min and 150 min, respectively, within a week. From studies on the impact of training using instruction from a DVD, it has been shown that exercises performed 2–3 times a week can significantly reduce the symptoms of postpartum depression. A higher health awareness characterizes women who are physically active in the postpartum period compared to inactive women.[10-12]

The impact of education on health and physical activity and education itself has been investigated by Norman et al. Immediately after the end of the project;

there was a significant reduction in depression among physically active women and those receiving educational materials compared to women in the control group. The positive influence of long-term intervention (six months of training) on depressive disorders in women in puerperium was demonstrated by Daley et al. Women in puerperium has increased the level of tension, anxiety, or fatigue. However, walking is the primary physical activity that women start after giving birth. It has been shown that walking training can significantly reduce the level of postpartum depression. The previous studies show that physical activity is a significant element in preventing and treating depressive disorders postpartum. Activities during both pregnancy and postpartum have a substantial impact on the occurrence of postpartum depression.[13-16]

2. Conclusion

In conclusion, physical activity during pregnancy, pregnancy, and puerperium, or in the puerperium itself, reduces the symptoms of postpartum depression. It also improves well-being and reduces the level of fatigue in young mothers. Supervised physical training, training in the water environment, and homemade exercises positively impact women's mental health in the puerperium.

3. References

1. Bjelic A, Cetkovic N, Trninc-Pjevic A, Mladenovic-Segedi, L. The phenomenon of pregnancy—A psychological view. Ginekol. Pol. 2018; 89: 102–106.
2. Rowlands I.J, Redshaw M. Mode of birth and women's psychological and physical wellbeing in the postnatal period. BMC Pregnancy Childbirth 2012; 12.
3. Ng M, Fleming T, Robinson M, et al. Global, regional, and national prevalence of overweight and obesity in children and adults during 1980–2013: a systematic analysis for the Global Burden of Disease Study 2013. Lancet 2014;384(9945):766–781 [PubMed: 24880830]
4. Harrison CL, Teede HJ, Lombard CB. How effective is self-weighing in the setting of a lifestyle intervention to reduce gestational weight gain and postpartum weight retention? Aust N Z J Obstet Gynaecol 2014; 54(4): 382–385 [PubMed: 24738837]
5. Leigh B, Milgrom J. Risk factors for antenatal depression, postnatal depression and parenting stress. BMC Psychiatry 2008, 8, 24.
6. Norton K, Norton L, Sadgrove D. Position statement on physical activity and exercise intensity terminology. J Sci Med Sport 2010; 13(5): 496–502 [PubMed: 20005170]
7. Hung, C.H. The psychosocial consequences for primiparas and multiparas. Kaohsiung J. Med. Sci. 2007; 23: 352–360.
8. Mehta S, Mehta N. An overview of risk factors associated with postpartum depression in Asia. Ment. Illn. 2014; 6: 5370.
9. Takahasi Y, Tamakoshi K. Factors associated with early postpartum maternity blues and depression tendency among Japanese mothers with full-term healthy infants. Nagoya J. Med. Sci. 2014; 76: 129–138.
10. Tuteja T.V, Niyogi, G.M. Post-Partum psychiatric disorders. Int. J. Reprod. Contracept. Obs. Gynecol. 2016; 5: 2497–2502.
11. Bajurna, B, Gale˛ba, A, Szwarc, A.; Petermichl, D. Mental changes occurring in women in planned and unplanned pregnancy after delivery. Hyg. Pub. Health 2014; 49: 536–542.
12. Fiala A, Švancara J, Klánová, J, Kašpárek, T. Sociodemographic and delivery risk factors for developing postpartum depression in a sample of 3233 mothers from the Czech ELSPAC study. BMC Psychiatry 2017; 1–5.
13. Henshaw C. Mood disturbance in the early puerperium: A review. Arch. Womens Ment. Health 2003; 6: 33–42.

14. Reck C, Stehle E, Reinig K, Mundt C. Maternity blues as a predictor of DSM-IV depression and anxiety disorders in the first three months postpartum. J. Affect. Disord. 2009; 113: 77–87.
15. Schipper-Kochems S, Fehm, T, Bizjak, G, Fleitmann A.K, Hagenbeck, C.; Schäfer, R.; Franz, M. Postpartum Depressive Disorder-Psychosomatic Aspects. Geburtshilfe Frauenheilkd 2019; 79: 375–381.
16. Edvinsson A, Skalkidou A, Hellgren C, Gingnell M, Ekselius L, et al. Different patterns of attentional bias in antenatal and postpartum depression. Brain Behav. 2017; 7, e00844.