Association between physical activity and risk of postpartum depression

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Despite the recommendation of physical activity for preventing and treating depression, exercise therapy is not widely utilized in postpartum depression (PPD) as commonly perceived. The present study aims to investigate the association between physical activity and the risk of PPD, providing supplementary treatment recommendations. For the study 95 participants were recruited in their third trimester of pregnancy until one week after delivery, dividing them into three groups based on Edinburgh postnatal depression scale (EPDS) scores: healthy controls group with a score < 9, $n = 40$; screening positive group with a score 9–11, $n = 31$; PPD group with a score ≥ 12, $n = 24$. Physical activity rating scale (PARS-3) was used to measure activity levels along with daily step records from mobile phones. The total scores of PARS-3, exercise time and frequency differed among the three groups. There were significant negative correlations between exercise data and postpartum EPDS scores at baseline as well as during the second and third trimesters of pregnancy. The findings of this study highlight the importance of physical activity during the postpartum period and provide optimal timing and frequency recommendations for exercise in pregnant women.

Keywords: Daily steps, depression, exercise, physical activity, postpartum.

further complicates mood control for new mothers who may struggle with bonding with their babies while doubting their own abilities as caregivers ultimately leading to negative impacts on both maternal health and infant development[10,13,18]. Early prevention and intervention through non-pharmaceutical methods remain crucial in addressing this issue.

Physical activity can be recommended as an intervention strategy for depression, aiming to alleviate or even cure depressive symptoms[19–25]. Reduced energy and diminished initiative are significant manifestations of depression. Exercise can improve cardiovascular and pulmonary function, enhance metabolism, promote mood relaxation, alleviate anxiety, boost energy levels, and enhance self-confidence and self-esteem[26–28]. From a practical standpoint, exercise therapy is a safe, effective and straightforward approach that serves as a valuable self-treatment method for depression particularly during the recovery stage[25,29–33]. Combining exercise therapy with other interventions, can achieve desired outcomes with reduced effort. Numerous researchers have highlighted the benefits of aerobic exercise[22]. The mechanisms underlying these effects include serotonin metabolism[34–36], immune activation[36,37] and skeletal muscle function[38] among others, and these will be discussed in detail below.

Although the benefits of exercise are widely acknow-