



PHYSICAL ACTIVITY AND EMOTIONAL WELL-BEING AMONG ADULT WOMEN WITH OBESITY: A CRITICAL REVIEW USING GPAQ AND WHO-5 WELL-BEING INDEX

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Abstract: Physical activity refers to all movement including during leisure time, for transport to get to and from places, or as part of a person's work or domestic activities. Physical inactivity and sedentary behaviors are contributing to the rise in NCDs and placing a burden on healthcare systems. Improving levels of physical activity will benefit health and well-being and contribute to attainment of global NCD targets and a number of the Sustainable Development Goals. WHO regularly monitors trends in physical inactivity level. A recent study found that nearly one third (31%) of the world's adult population, 1.8 billion adults, are physically inactive and it is significantly high among women. This critical review aims to critically examine the existing evidence on the relationship between physical activity and emotional well-being among adult women with obesity and to examine the relevance and applicability of standardized measures GPAQ and WHO – 5 well – Being Index among adult population.

Keywords: Physical activity; obesity; adult women; emotional well-being; Global Physical Activity Questionnaire; WHO – 5 Well – Being Index; rural women; critical review.



Introduction:

WHO defines physical activity as any bodily movement produced by skeletal muscles that requires energy expenditure. Physical activity refers to all movement including during leisure time, for transport to get to and from places, or as part of a person's work or domestic activities. Both moderate- and vigorous-intensity physical activity improve health. Popular ways to be active include walking, cycling, wheeling, sports, and active recreation and play, and can be done at any level of skill and for enjoyment by everybody.

Physical activity is beneficial to health and well-being and conversely, physical inactivity increases risk for non- communicable diseases (NCDs) and other poor health outcomes. Together, physical inactivity and sedentary behaviors are contributing to the rise in NCDs and placing a burden on healthcare systems. Improving levels of physical activity will benefit health and well-being and contribute to attainment of global NCD targets and a number of the Sustainable Development Goals.

WHO regularly monitors trends in physical inactivity level. A recent study (1) found that nearly one third (31%) of the world's adult population, 1.8 billion adults, are physically inactive. That is, they do not meet the global recommendations of at least 150 minutes of moderate-intensity physical activity per week. This is an increase of 5 percentage points between 2010 and 2022. If this trend continues, the proportion of adults not meeting recommended levels of physical activity is projected to rise to 35% by 2030.

Globally, there are notable age and gender differences in levels of physical inactivity.

- Women are less active than men by an average of 5 percentage points. This has not changed since 2000.
- After 60 years of age physical inactivity levels increase in both men and women.
- 81% of adolescents (aged 11–17 years) were physically inactive (2).
- Adolescent girls were less active than adolescent boys, with 85% vs. 78%, not meeting WHO guidelines.

This critical review aims to critically examine the existing evidence on the relationship between physical activity and emotional well-being among adult women with obesity and to examine the relevance and applicability of standardized measures GPAQ and WHO – 5 well – Being Index



among adult population.

Physical activity among adult women with obesity

Ramya MR , Kamath V and Hemapriya S (2017) had conducted a cross sectional study to assess the physical activity levels using global physical activity questionnaire among obese and non-obese adults individuals in rural and urban fields of South India. The study was done among 237 samples by simple random sampling .Study identified that 61.39 % belong to low physical activity level. The study highlighted that the prevalence of obesity was low among people who practices daily walking and bicycling. Thereby study findings support the use of GPAQ for assessing physical activity among adults and demonstrates the relevance of measuring physical activity in populations affected by obesity.

Sharma,D., Goel, N, K., Kaur,R., Khosla,N., and Shekam,M.(2022) conducted a community based cross sectional study among 374 adults aged 20 – 50 years which was aimed to assess the prevalence and predictors of physical inactivity using Global Physical Activity Questionnaire. It was found that the prevalence of physical inactivity was 52.1% among adults. It was found that physical inactivity was high among females (OR = 1.9[1.2 -3.1]), whereas the literate individuals (OR =1.8 [1.04 – 3.2]) and current tobacco users (OR = 2.2[1.8 -4.1]), were significantly more physically inactive. The study recommended the need for strategies to increase physical activity targeting women to improve their knowledge and awareness.

Mathews E, Salvo D, Sarma PS, Thankappan KR and Pratt M (2016) done a study aimed to adapt and validate the GPAQ for women in Thiruvananthapuram, India. The study involved 1,303 women between the ages of 18 and 64 years. A group of 47 women took part in the accelerometer validation part of the study. The link between the modified GPAQ measured to-vigorous physical activity and the measurements from the accelerometer was 0.69 (95% CI 0.39–0.85). The intra class correlation coefficient was 0.78 (95% CI 0.56–0.90). The authors concluded that GPAQ can be used to measure activity for women, in India, although the cultural adaptation might help to measure the activities that are done locally.

Satish .T, Mathews, E. (2023) researchers in Kerala had developed a modified GPAQ for



adults and examined its construct validity. The study included 451 adults aged 20 years and above, of whom 52.6% were women. Higher moderate-to-vigorous physical activity expressed as MET-minutes/week was associated with lower body weight, waist circumference and systolic blood pressure. These findings indicate that physical activity measured using GPAQ is relevant to important health indicators among Indian adults.

Link between Physical activity and emotional well-being

Buecker, S., Simacek, T., Ingwersen, B., Terwiel, S., & Simonsmeier, B. A. (2021) conducted a meta-analysis to test the relation between physical activity and positive health-related subjective well-being (SWB) among healthy individuals. Random-effects meta-analysis using robust variance estimation revealed a positive relation ($d = 0.360$, 95% CI [0.301, 0.420]). This effect was found in experimental studies as well as in correlational and quasi-experimental studies. Physical activity was more strongly related to positive affect compared to cognitive well-being and was unrelated to negative affect. Thus the study evidence the importance of physical activity that promotes emotional and psychological well-being.

Singh B and colleagues (2023) done an umbrella review of systematic reviews examining the effectiveness of physical activity interventions for depression, anxiety and psychological distress. The review included 97 systematic reviews, 1,039 trials and data from 128,119 people. It found that physical activity interventions were enhanced outcomes, in depression, anxiety and psychological distress. The results show evidence that physical activity helps in promoting mental health, although the methodological quality of some underlying reviews was limited.

Use of Physical activity and WHO-5 well-being

WHO – well - being index provides a brief assessment of the subjective expression of psychological well- being during last two weeks of their life. It consists of five items which are positively phrased. Higher the score, higher the mental well- being. WHO-5 Well-Being Index is useful to assess the positive emotional well- being of individuals rather than only depression of anxiety.

Chiara Reck , Dorothee Dengler, Lukas Belz, Volker Harth, Marcus Oldenburg (2025)



done a cross sectional study among 583 seafarers to assess the Well-being, physical activity and health promotion among officers using GPAQ and WHO-5 Well-Being Index. The study found differences higher level of well-being among officers with higher physical activity (10,487 vs 8,035 MET – min /week; $p = 0.005$), while officers with low level of physical activity (3.5 vs 2.4 hours / day; $p = 0.001$) had lower well-being scores. Thus the study demonstrated the practical use of GPAQ and WHO - 5 well-being scales together to examine physical activity and well – being among adults.

Ratanawichit et al. (2025) conducted a cross sectional study involving 881 residents from 50 districts in Bangkok, Thailand. The researchers used the Global Physical Activity Questionnaire (GPAQ) and the WHO-5 Well-Being Index to measure physical activity levels and well-being. The results showed that recreational walking was linked to chances of meeting physical activity guidelines and better well-being scores. People who walked for leisure were more likely to have physical activity and reported higher well-being. This suggests that neighborhoods designed to support walking may help people stay active and feel better mentally. However because the study was cross-sectional it could not prove that walking causes outcomes. The findings only show an association.

Relevance to the study: This study is especially relevant because it used the same tools as this study GPAQ and the WHO-5 despite differences, in population and location. It provides support for looking at how physical activity connects with well-being, particularly among adult women with obesity.

Critical Synthesis:

The reviewed literature provides evidence that the physical activity and emotional well-being has significant association and it insist the use of standardized instruments such as the Global Physical Activity Questionnaire (GPAQ) and WHO – 5 Well-Being Index. Indian studies conducted among adults and women had evidenced the use of GPAQ for assessing physical activity, including culturally relevant activities such as walking and bicycling. Study by Mathew's et.al favors the validity and reliability of culturally adopted Global physical activity Questionnaire among Indian women. Similarly, the study by Satish and Mathews proposed strong association between higher moderate-to-vigorous physical activities using GPAQ suggesting it as a health



indicator among Indian adults

By analyzing the existing research evidence, it demonstrated that physical activity is positively associated with the aspects of psychological well - being demonstrating that physical activity can be measured using GPAQ and whereas subjective well – being is assessed by using WHO – 5 Well-Being Index among Indian adults . Cross sectional studies involving heterogeneous groups provides less significance among rural women with obesity. Furthermore, limited intervention-based evidence has simultaneously examined physical activity and emotional well-being using standardized measures such as GPAQ and WHO-5 among adult population. Therefore, a nurse-led community-based intervention targeting both physical activity and emotional well-being among rural women with obesity warrants further investigation.

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