Awareness and Barriers of Exercise Among Pregnant Women in Bisha, Saudi Arabia

Ayman M. El-Ashkar MD* Lamis A Faleh**, Mada A Alghamdi**, Maha S Alaklobi**, Manar B Almnabhi**, Noura A Alshahrani**, Norah A Albeishi**, Rawan A Alqahtani**, Reef T Alshahrani**, Rizwana Memon PhD*** Ashraf S Metwally, MD* Bahaeldin K. Elamin, PhD*, Suaad Elnour, MD****

ABSTRACT

Physical activity during pregnancy is the best way to prevent various problems during delivery and even obesity after pregnancy. The study assessed the awareness and barriers to exercise among pregnant women in Bisha, Saudi Arabia, in 2024. The study was conducted within one month in February 2024 in Bisha city. There are eleven primary health care (PHC) centers containing antenatal care clinics, and five PHC centers were selected, which are (Al-Roshen, Plot 1, Plot 2, Janoub Al-Madina, and Almatar health care centers). In each PHC center, a list of pregnant women's phone numbers was collected. The number of participants was 295, and the self-administered questionnaire was distributed through text messages and phone calls. Overall, 44.4% of pregnant women had poor knowledge about exercise. 82.2% of pregnant women have a low level of exercise due to a lack of time, as the first and most important barrier. Women over the age of 30 have the highest awareness regarding exercise during pregnancy, and there was a statistically significant difference (c2 = 0.039, P < 0.05). This study revealed a poor level of awareness and practice of exercise among women during pregnancy. However, the age of thirty and above was associated with good awareness. The most important barriers were a lack of time and feeling tired.

Keywords: Awareness; Barriers; Bisha; Exercise; Pregnancy; Saudi Arabia.

INTRODUCTION

Lack of exercise or any physical activity during pregnancy can cause several issues during birth and even obesity after delivery[1]. Obesity and gestational weight gain are major problems in Saudi Arabia since complications such as macrocosmic infant delivery, gestational diabetes, pregnancy-induced hypertension, pre-eclampsia, venous thromboembolism, labor induction, and cesarean delivery are all considered risks to the mother and the infant's life[2,3].

Nevertheless, recent studies showed that physical exercise is beneficial for women during pregnancy and also in the postpartum period. It is not associated with risks for the newborn and can lead to changes in lifestyle that imply long-term benefits[4–7]. The babies born of regularly exercising mothers tolerate labor well, show less behavioral or biochemical evidence of undue stress in late pregnancy and labor, are vigorous at birth, and do well in the immediate neonatal period[8].

Various studies have shown that physical activity tends to decrease after pregnancy. According to a study that was conducted in Brazil on a total of 1279 women showed that exercise practice was lower than before pregnancy. 55.2% of these women stopped exercising due to pregnancy, while 14.9% were told to stop exercising due to false beliefs[6,8]. In Saudi Arabia, a study in Riyadh on a total of 442 pregnant women showed that 84.2% of them did not exercise during pregnancy, and 49% had low awareness regarding exercise[2]. Another study in Qassim, Saudi Arabia, on a total of 274 women showed that 32% of women were not exercising during pregnancy, and only 12% of the women met the guidelines for physical exercise[9].

Numerous differences between research reveal that socio-demographic and ecological factors might impede exercise. The socio-demographic characteristics that are most frequently linked to decreased physical activity are lower educational background, poorer income, and having more children living at home[10]. Accessibility issues, transportation issues, exhaustion, safety worries, a lack of social support and motivation, childcare duties, economic issues, and a lack of time were some of the challenges[2,11]. This study focused on assessing the level of awareness and barriers to exercise among pregnant women in Bisha, Saudi Arabia in 2024.

According to a study that was conducted in the Department of Obstetrics and Gynecology at Indira Gandhi Medical College and Research Institute in Puducherry, India. Although women's understanding of exercise during pregnancy was below average, they had a positive attitude toward exercise. The main reason for poor knowledge was inadequate education. Very few pregnant ladies exercise. The main reason for the decreased practice was a lack of understanding regarding the advantages and disadvantages of exercising during pregnancy[11].

Another study conducted in the United States showed that people with low socioeconomic status reported a lack of resources more

* Department of Microorganisms and Clinical Parasitology
College of Medicine,University of Bisha, Bisha, Saudi Arabia.
Email: aymanpara@yahoo.com / galaxy202521@gmail.com
** Medical Student at the College of Medicine
University of Bisha, Bisha, Saudi Arabia.
*** Public Health Consultant at King Abdullah Hospital
Bisha, Saudi Arabia.
**** Department of Obstetrics and Gynecology
College of Medicine, University of Bisha, Bisha, Saudi Arabia.

than people with high socioeconomic status. Predictors of becoming insufficiently active during pregnancy included having kids at home, lengthier workdays, and a shortage of childcare[12].

There is a high knowledge of physical activity amongst pregnant women in Ho, a city located in Ghana. Participants reported barriers to physical activity during pregnancy as no exercise habits 66.2%, no time 22.1%, and fear of miscarriage 11.7%[13].

In Riyadh, Saudi Arabia, the level of awareness regarding the benefits of physical activity during pregnancy was 43%. Eighty-three percent of pregnant women who engaged in low physical activity reported fatigue as their first barrier, and 20.5% reported transportation problems as their second barrier. The high level of awareness and practice of physical activity were noticed in pregnant women who had a high education level, low-level activity (LLA) 41.9%, and high-level activity (HLA) 57.1%. Pregnant women who had a high education level showed a prevalence of 57.1% with a high level of awareness and 41.9% with a low level of awareness. The pregnant women who were not working showed 70.7% with a high level of awareness and 78.7% with a low level of awareness[2].

METHODS AND MATERIALS

Study Design: Analytical-Cross-Sectional study.
Study period: The study was conducted within one month in February 2024.
Study area: This study was conducted in Bisha City, Saudi Arabia in 5 PHC centers that contain Antenatal care clinics (Al-Roshen, Plot 1, Plot 2, Janoub Al-Madina, and Almatar health care centers).
Study Population: Pregnant women of any age and stage who are residents of Bisha, Saudi Arabia.
Inclusion Criteria: Bisha residents, pregnant women of any age, pregnant at any stage of pregnancy during the data collection process, able to understand Arabic and/or English, who agree to participate in the study.
Exclusion Criteria: Living outside Bisha, Illiterate, non-pregnant women, and those who do not agree to participate in the study.
Sampling:
Sample Size[2]:

$$n = \frac{z^2 \times p \times q}{d^2}$$

n= minimum sample size
z= standard normal deviation at 95% confidence intervals = 1.96
p= population proportion (0.8).
q= (1-p) = (1-0.8) = 0.2
d= margin of error (0.05)
n0= (1.96)2 × (0.8× 0.2) / (0.05)2
n0 = 246
Adding 10% to the non-respondents = sample size of 271

Sample Techniques: Convenience non-random sampling method.

Data Collection Plan: This study was conducted in Bisha city. There are eleven primary health care (PHC) centers containing antenatal care clinics, and five PHC centers were selected, which are (Al-Roshen, Plot 1, Plot 2, Janoub Al-Madina, and Almatar health care centers). In each PHC center, a list of pregnant women's phone numbers was collected, and the self-administered questionnaire was distributed through text messages and phone calls. An online questionnaire (Google Form) was used, and researchers who conducted a similar previous study were asked for permission to quote the questionnaire [2]. The questionnaire consists of 18 questions divided into three sections. The first section consists of seven questions covering socio-demographic characteristics. The second section contains nine questions that assess the awareness regarding the benefits of exercise. The third section has two questions about the barriers to not performing physical exercise.

Data Analysis: Data was analyzed by using the Statistics Package for Social Sciences (SPSS) version 26. The descriptive analysis was done by developing frequency distribution and charts, whereas analytical statistics were done by using the Chi-square test for a significant relationship between awareness and barriers of physical activity.

Ethical approval: It was obtained from the ethical committee of the University of Bisha College of Medicine (UBCOM). The participants' agreement on the research consent letter will be involved in the research.

RESULTS

This study was conducted in five primary healthcare centers (Al-Roshen Healthcare Center, Plot 1 Healthcare Center, Plot 2 Healthcare Center, Janoub Al-Madinah Healthcare Center, and Al-Matar Neighborhood Healthcare Center) during February 2023.

A total of 303 questionnaires were filled out and returned, giving a response rate of 112% (303/271 *100).

Demographic data:

The majority of the pregnant women were first-time pregnant (55.4%), of age 20–29 years old (48.8%), university educated (77.2%), employees (51.8%), and had a family income of more than 10000 Saudi Riyals (41.9%) (Figure 1).

A statistically significant difference was found between pregnant women with a high and low level of awareness in terms of age (c2 = 0.039, $P < 0.05$).

No significant difference was found between pregnant women with high and low levels of awareness in terms of education, income, gestational age, number of children, and working status (Table 1).

Table 1. Relationship between level of knowledge regarding exercise benefits and sociodemographic factors

Variable	Level of knowledge				
	Excellent	Good	Poor	Chi-square	*P*-value
Age					
Less than 30	35	61	81		**.039***
More than 30	38	30	50	6.479[a]	
Education					
High school or lower	17	17	33	1.315[a]	**.518****
University and above	56	74	98		
Family income					
Less than 5000 SAR	11	16	22	3.842[a]	
5000 – 10000 SAR	25	42	57		**.428****
More than 10000	37	33	52		

*Significant: P< 0.05, **Not significant; P>0.5

Barriers to physical activity among pregnant women

82.2% of pregnant women have low levels of physical activity, and having no time was the first and the most important barrier 56.2% followed by feeling tired 43.8%, while 18.8% had no access to facilities, other barriers are shown in (Figure 2).

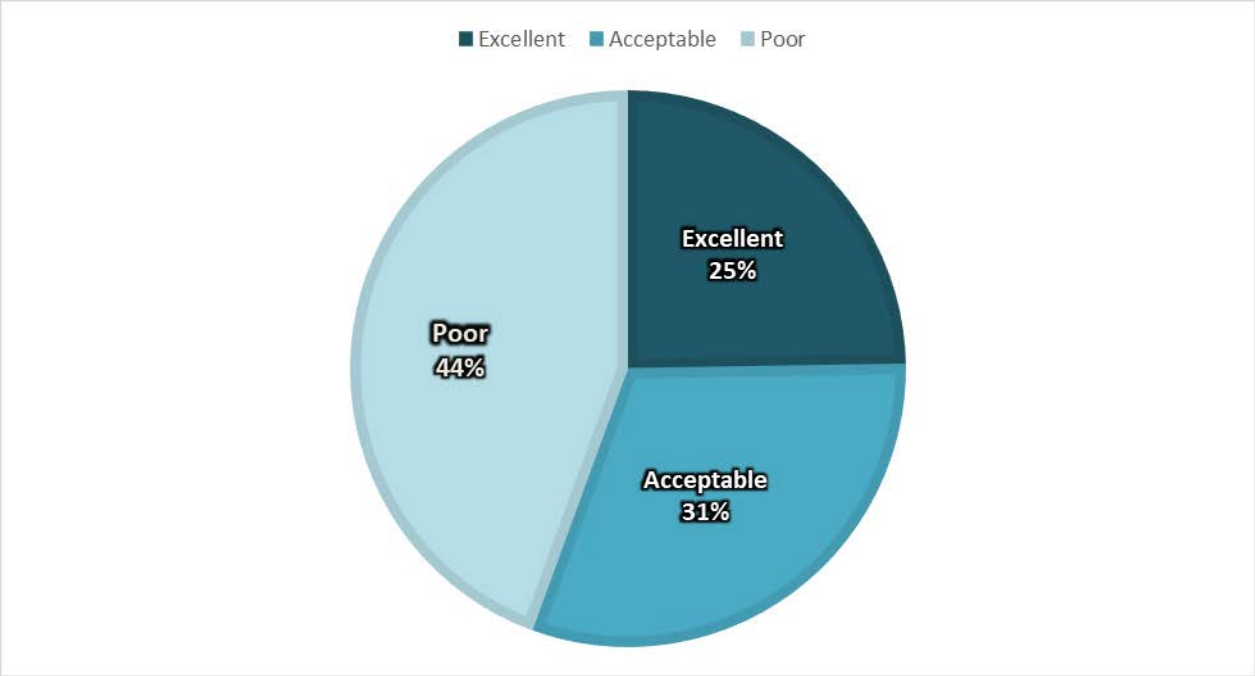

Figure 1. Level of knowledge about exercise benefits among pregnant women

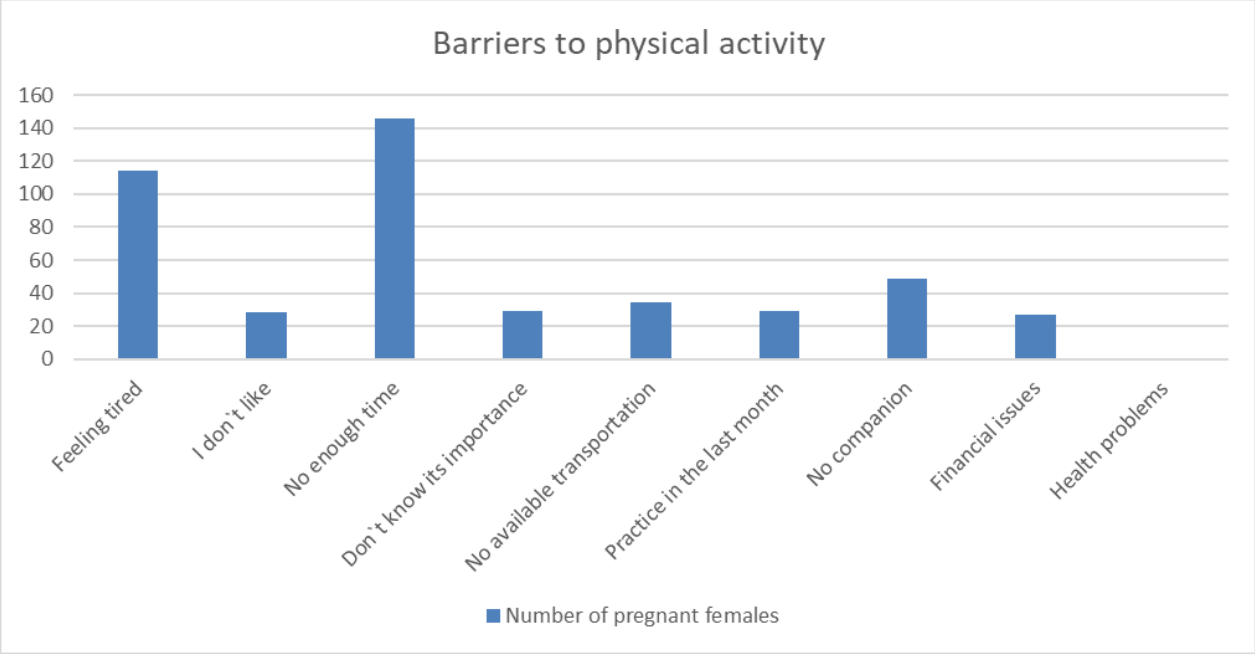

Figure 2. Barriers to physical activity

DISCUSSION

This study included 303 participants attending five PHC centers in Bisha, Saudi Arabia. Regarding the level of knowledge about exercise, 55.5% of women ranged from having an excellent to an acceptable level of knowledge, while 44.4% had poor knowledge about the benefits of exercise for pregnant women. There was a statistically significant difference between the level of knowledge and age (P = 0.039), as the level of knowledge about the importance of exercise for pregnant women directly increased with the advancement of age. Moreover, no significant differences (P= 0.518 and 428) were noted between the level of knowledge, the educational level, and the family income, respectively. This study revealed that most of the pregnant women participants (82.2%) reported low levels of exercise, and the most important barrier was lack of time (56.2%), followed by feeling tired and having no access to facilities.

Our results are comparable to a study performed in Riyadh, Saudi Arabia, in which 50.67% of participants showed good knowledge about the benefits of exercise among pregnant women. Most pregnant women (84.2%) were not regularly exercising. In contrast to our study, statistically significant differences were found between the level of knowledge of exercise benefits for the pregnant females and the level of education, work status, and family income, while age was not found to be a statically significant factor[2]. It is worth mentioning that another

study performed in Saudi Arabia on the knowledge of exercise benefits in pregnant women supported our finding regarding the significant relation between age and the level of knowledge. They reported that older women (30 years or older) had better knowledge about exercise benefits that was statistically significant (P = 0.001) compared to younger age groups (less than 30 years old). Lack of time was also one of their major findings regarding exercise barriers[6]

Comparing the study results with international studies with the same concern revealed a higher level of knowledge and practice of exercise among women in developed countries. Schmidt et al reported that 80% of women in Germany were well-informed about the benefits of exercise and had a high level of knowledge[14]. Another study in Italy showed that (52%) of women were active and performed exercise at any time during pregnancy[15].

Recommendations

We recommend the importance of increasing the awareness of exercise during pregnancy through educational programs for all women of childbearing age. Considering the lack of resources is one of the most reported barriers to exercise, it is important to recommend providing the resources that are needed to perform physical exercises, such as parks, affordable gyms, gym equipment, and public transportation. Also, trained physicians and healthcare providers to be involved in active counseling to encourage physical exercise among pregnant women.

Limitations

Convenience sampling was used to recruit participants, which might affect the generalizability of the results.

CONCLUSION

In conclusion, this study revealed a poor level of awareness and practice of exercise among women during pregnancy. However, the age of thirty and above was associated with good awareness. The most important barriers were the lack of time and feeling tired.

Authorship Contribution: All authors agree to be accountable for all aspects of work, ensuring integrity and accuracy. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

AME: The plan of the study, Methodology, Supervision, Writing-Original draft, Writing-Reviewing & Editing. LAF, MAA, MSA, MBA, NAA, NAA, RAA, RTA, RM: Data collection, formal analysis, and interpretation. SE: Conceptualization, study design, supervision, writing, reviewing, and editing. The authors assert the correctness of their order.

Potential Conflicts of Interest: None

Competing Interest: None

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REFERENCE

1. Wojtyła A, Kapka-Skrzypczak L, Biliński P, et al. Physical activity among women at reproductive age and during pregnancy (Youth Behavioural Polish Survey - YBPS and Pregnancy-related Assessment Monitoring Survay - PrAMS) - epidemiological population studies in Poland during the period 2010-2011. Ann Agric Environ Med 2011;18(2):365-74.
2. Al-Youbi G, Elsaid T. Knowledge, attitude, and practices on exercise among pregnant females attending Al-Wazarat Health Center, Riyadh, Saudi Arabia. J Family Med Prim Care 2020;9(8):3905.
3. Guelinckx I, Devlieger R, Beckers K, et al. Maternal obesity: pregnancy complications, gestational weight gain and nutrition. Obes Rev 2008;9(2):140-50.
4. Syed H, Slayman T, Thoma KD. ACOG committee opinion no. 804: Physical activity and exercise during pregnancy and the postpartum period. Obstet Gynecol 2021 Feb 1;137(2):375-6.
5. Di Mascio D, Magro-Malosso E, Saccone G, et al. Exercise during pregnancy in normal-weight women and risk of preterm birth: a systematic review and meta-analysis of randomized controlled trials. Am J Obstet Gynecol 2016;215(5):561-71.
6. Gari A, Aldharman S, Alalawi W, et al. Exercise during pregnancy: knowledge and beliefs among females in Saudi Arabia. Cureus 2022;14(10):e30672.
7. Nascimento SL, Surita FG, Cecatti JG. Physical exercise during pregnancy: a systematic review. Curr Opin Obstet Gynecol 2012;24(6):387-94.
8. Clapp JF. Exercise during pregnancy: A clinical update. Clin Sports Med 2000;19(2):273-86.
9. Alaglan A, Almousa R, Alomirini A, et al. Saudi women's physical activity habits during pregnancy. Womens Health (Lond) 2020;16.
10. Nascimento SL, Surita FG, Godoy AC, et al. Physical activity patterns and factors related to exercise during pregnancy: A cross sectional study. PLoS One 2015;10(6):e0128953.
11. Harrison A, Taylor N, Shields N, et al. Attitudes, barriers and enablers to physical activity in pregnant women: a systematic review. J Physiother 2018;64(1):24-32.
12. Pereira MA, Rifas-Shiman SL, Kleinman KP, et al. Predictors of change in physical activity during and after pregnancy: Project Viva. Am J Prev Med 2007;32(4):312-9.
13. Asante DO, Osei F, Abdul-Samed F, et al. Knowledge and participation in exercise and physical activity among pregnant women in Ho, Ghana. Front Public Health 2022;10.
14. Schmidt T, Heilmann T, Savelsberg L, et al. Physical exercise during pregnancy - How active are pregnant women in Germany and how well informed? Geburtshilfe Frauenheilkd 2017;77(5):508-15.
15. Skjold I, Benvenuti MB, Haakstad LA. Why do so many pregnant women give up exercise? An Italian cross-sectional study. Womens Health (Lond) 2022;18