# Knowledge, Attitude, And Practice of Physical Exercise Among Pregnant Women at Maternity and Children Hospital in Dammam City, Saudi Arabia

**By**

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***Abstract: OBJECTIVE:*** The study aimed to assess the prevalence of prenatal exercise practice in Saudi pregnant women attending the physical therapy department at Maternity and Children Hospital in Dammam. Also, to evaluate the knowledge, attitudes, and practices of expectant mothers in Maternity and Children Hospital in Dammam regarding prenatal exercise.

**Methods:** A total of 508 Saudi pregnant women, aged (≥18 years old) were enrolled in the prenatal clinic, physiotherapy department, and Maternity and Children Hospital in Dammam from 20 February 2023 to 31st August 2023. A structured questionnaire was administered face-to-face to collect data. Data were analyzed using Statistical Package for Social Sciences (SPSS).

**RESULTS:** There was a significant association between knowledge about the benefits of prenatal exercises. However, there was no significant association between knowledge about contraindications and prenatal exercises. We found significance between knowledge score and education.

**CONCLUSION:** Generally, the knowledge of our women on exercise during pregnancy was high and their attitude was favorable. Few were practicing exercise in pregnancy. The main reason for the reduced practice was a lack of awareness of the demerits of exercise in pregnancy.

**KEYWORDS:** knowledge, pregnancy, exercise, Saudi Arabia, Practice, Attitude, Physiotherapy

## *INTRODUCTION:*

Physical activity (PA) is vital for improving and maintaining health throughout life, including during pregnancy. Regular exercise is promoted for its overall health benefits. Pregnancy is recognized as a unique time for behavior modification and is no longer considered a condition for confinement. It is currently recognized that habits adopted during pregnancy could affect a woman's health for the rest of her life Scientific evidence has shown that exercise during pregnancy has potential benefits for the mother and the baby.

The foremost maternal physical health benefits include improving muscular strength, diminishing back pain, preventing excessive weight gain, lowering the risk of developing gestational hypertension and diabetes, and reducing lower limb edema as well as urinary incontinence.

Moreover, Reports indicate that exercise during pregnancy can improve women's psychological well-being. Potential fetal health benefits include promoting fetal growth, enhancing fetal cardiac autonomic control, and improving neurological and mental development. In addition, regular physical exercise during pregnancy could reduce medical interventions during labor, such as cesarean sections, as well as alleviate pain and discomfort during labor. Physical inactivity is the fourth leading risk factor of early maternal mortality worldwide.

It is estimated that due to physical inactivity pregnant mothers are at risk for breast and colon cancer (21–25%), diabetes (27%), and ischemic heart disease (30%).

Lack of exercise during pregnancy might result in loss of muscular and cardiovascular fitness, excessive maternal weight gain with a raised risk of Gestational Diabetes Mellitus, varicose veins, lower back pain, and poor psychological adjustment.

A study done in Poland reported that there was a higher percentage of cesarean delivery (62%) in pregnant women who did not perform antenatal exercise than in pregnant women who performed antenatal exercise (26%) .

Moreover, it has been estimated that around 16.4% of Saudi women were inactive, and 9.1% lacked awareness of physical activity's importance during pregnancy 10. Consequently, appropriate education toward exercise will provide a positive attitude about their health during the gestational and postpartum periods. Healthcare providers play an important role in raising awareness and educating pregnant women about the importance of physical activity. American Congress of Obstetricians and Gynecologists (ACOG) recommends aerobic exercise of at least 150 minutes per week for healthy pregnant and postpartum women.

Several recommendations promote regular, moderate-intensity exercise as an integrative component of maternal preventive care, guiding prescription and eventual contraindications.

However, due to persistent misconceptions and lack of knowledge or support, the majority of pregnant women tend to have a sedentary lifestyle, especially in the third trimester.

It is very important to create awareness about benefits and contraindications and engage in physical exercise to compact pregnancy-related complications. Physical therapy specialists are important providers of care that contribute to the health and well-being of women throughout the perinatal period and beyond.

To date, there is no precise data available for pregnant women from the Maternity and Children Hospital in Dammam (MCHD) Eastern region of KSA regarding the knowledge, attitudes, and practices of prenatal exercise.

Therefore, this study focuses on assessing the prevalence of prenatal exercise practice in Saudi pregnant women attending the Physical Therapy Department (MCHD). Also, evaluate the knowledge, attitudes, and practices of expectant mothers in (MCHD) concerning prenatal exercise.

**METHODS: Participants:**

A total of 508 pregnant women attend the physiotherapy department of the Maternity & Children's Hospital Dammam (MCHD). Normal Saudi pregnant women (≥18 years old) in any trimester were included in this study.

Those who were not pregnant, pregnant women aged less than 18 years, non-Saudi females, and participants who did not fill out the whole questionnaire were excluded from the study.

Ethical approval for the study was obtained from the Scientific and Clinical Studies and Research Department Maternity and Children Hospital - Dammam (MCHD) Institutional Review Board operates according to NCBE and Saudi laws and regulations. (PT-2023-001).

Informed consent of all respondents was required for participation in the study. All Pregnant women were enrolled in the prenatal clinic, physiotherapy department, MCHD. from 20 February 2023 to 31st August 2023.

A cross-sectional descriptive study to analyze the knowledge, attitude, and practice of exercise among pregnant women.

The instrument for data collection was a structured Knowledge, Attitude, and Practice (KAP) questionnaire. All subjects were recruited from the prenatal clinic , physiotherapy department, MCH in Dammam.

In case of agreement, they were asked to sign the informed consent form and all subjects were to complete a health status questionnaire to determine the inclusion and exclusion criteria and check their eligibility.

The researchers contacted the eligible subjects, aim and methods of the study were explained to all of them. Further to consent receipt, a face-to-face interview was held for data collection. Each participant was interviewed in a private location within the clinic. Participation in the study was voluntary.

All participants were assured of anonymity and confidentiality of their responses. Data were collected using a self-administered close-ended questionnaire. The questionnaire had 3 main parts: Questions related to the

socio-demographic characteristics, Questions related to physical activity and exercise practice, and Questions related to knowledge, benefits, and barriers of physical activity.

***Data Analysis:*** Categorical data were presented as frequencies and percentages while continuous data were presented as mean and standard deviation. Demographic characteristics, exercise history, awareness, benefits, and barriers were compared between those who exercised or currently exercising during this pregnancy and those who did not.

A score for awareness of the presence of exercise during pregnancy was created by summing up the positive responses for 5 awareness questions (one for "yes" and zero for "no"). Scores for perceived benefits and barriers were created by summing up the responses to 7 benefits and 7 barriers questions (two for "yes", one for "maybe", and zero for "no").

All scores were transformed into a 100 scale for easy interpretation and compared between those who exercised or currently exercising during this pregnancy and those who did not. Chi-square or Fisher's exact test, as appropriate, was used to examine differences in categorical variables while student t-test or Mann Whitney, as appropriate, were used to examine differences in continuous variables. All P-values were two-tailed. P-value <0.05 was considered as significant. SPSS (Version 25.0. Armonk, NY: IBM Corp) was used for all statistical analyses.

Zi-Ru.;Yunqi.; Shuning.; Xier &Guoxin(2025) shoes that A total of 80 participants completed the outcome measures at 4 weeks. The intervention group demonstrated significant improvements in confidence compared to the control group, including managing OA with exercise-based programs (adjusted mean difference=3.27, 95% CI 2.72-3.81), prescribing exercise (adjusted mean difference=3.13, 95% CI 2.55-3.72), and delivering telehealth (adjusted mean difference=4.41, 95% CI 3.77-5.05). KOAKS scores also improved significantly (mean change=9.46); however, certain belief bias related to OA concepts and the use of scans remained unchanged (25/41, 61% and 27/41, 66%, respectively). Approximately 73% (30/41) of the intervention participants rated the course as extremely useful. Interviews emphasized the need for cultural adaptation and practical telehealth training with real-life scenarios to enhance program applicability.

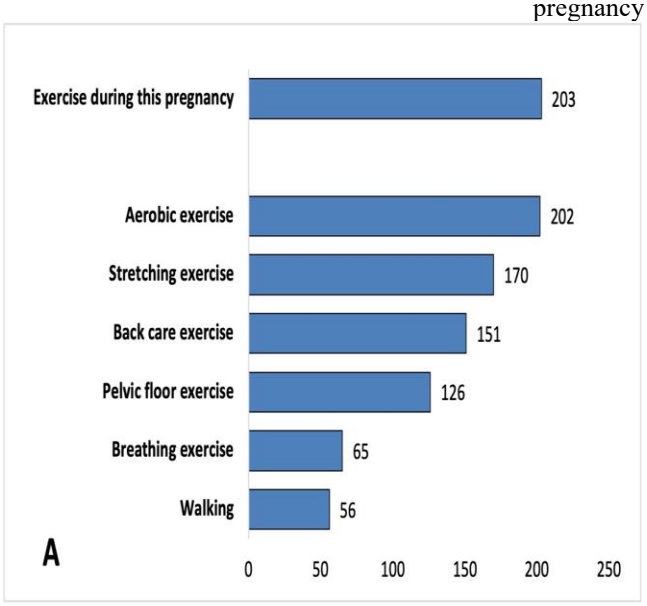
***Results :***

A total of 508 pregnant women were included in the current analysis. Out of them, 203 (40.0%) exercised or were exercising during the current pregnancy.

Among these 203 pregnant women, the most frequently practiced type was aerobic exercise (99.5%), followed by stretching exercise (83.7%), back care exercise (74.4%), pelvic floor exercise (62.1%), breathing exercise (32.0%), and walking (27.6%), as shown in Figure 1.

***Figure Captions:***

Figure 1. Number (A) and prevalence (B) of exercise during pregnancy



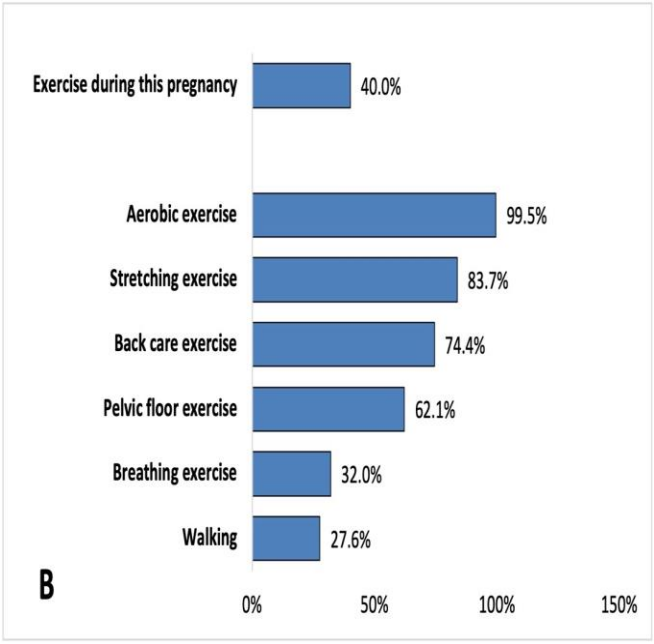




**Figure 1:**
**Number (A) and prevalence (B) of exercise during pregnancy**

***Table Captions:***

**Table 1: Demographic characteristics and exercise history by the status of exercise during pregnancy**

| | Exercised or were exercising during current pregnancy | | | P-value |
|---|---|---|---|---|
| | Yes | No | Total | |
| Age (years) | | | | |
| <20 | 8 (4.0%) | 9 (3.0%) | 17 (3.4%) | 0.877 |
| 20-29 | 68 (33.7%) | 97 (31.8%) | 165 (32.5%) | |
| 30-39 | 106 (52.5%) | 166 (54.4%) | 272 (53.6%) | |
| ≥40 | 20 (9.9%) | 33 (10.8%) | 53 (10.5%) | |
| Gestational age (weeks) | | | | |
| <13 | 43 (21.2%) | 54 (17.8%) | 97 (19.2%) | 0.329 |
| 13-28 | 95 (46.8%) | 162 (53.5%) | 257 (50.8%) | |
| 29-40 | 65 (32.0%) | 87 (28.7%) | 152 (30.0%) | |
| Number of pregnancies | | | | |
| One | 40 (19.8%) | 45 (14.8%) | 85 (16.8%) | 0.465 |
| Two | 48 (23.8%) | 78 (25.6%) | 126 (24.9%) | |
| Three to five | 83 (41.1%) | 138 (45.2%) | 221 (43.6%) | |
| More than five | 31 (15.3%) | 44 (14.4%) | 75 (14.8%) | |
| Educational level | | | | |
| Primary and intermediate school | 1 (0.5%) | 2 (0.7%) | 3 (0.6%) | <0.001 |
| Secondary school | 30 (14.8%) | 97 (31.9%) | 127 (25.0%) | |
| University or higher | 172 (84.7%) | 205 (67.4%) | 377 (74.4%) | |
| Paid employment | | | | |
| No | 129 (63.5%) | 195 (63.9%) | 324 (63.8%) | 0.929 |
| Yes | 74 (36.5%) | 110 (36.1%) | 184 (36.2%) | |
| Type of employment | | | | |
| Teaching | 13 (17.6%) | 18 (16.4%) | 31 (16.8%) | 0.562 |
| Governmental employee | 19 (25.7%) | 30 (27.3%) | 49 (26.6%) | |
| Private sector employee | 26 (35.1%) | 44 (40.0%) | 70 (38.0%) | |
| Health profession | 10 (13.5%) | 7 (6.4%) | 17 (9.2%) | |
| Others | 6 (8.1%) | 11 (10.0%) | 17 (9.2%) | |
| Exercising regularly before pregnancy | | | | |
| No | 137 (67.5%) | 211 (69.2%) | 348 (68.5%) | 0.687 |
| Yes | 66 (32.5%) | 94 (30.8%) | 160 (31.5%) | |
| Type of prior exercise | | | | |
| Aerobic exercise | 22 (33.3%) | 52 (55.3%) | 74 (46.3%) | 0.006 |
| Resistance exercise | 37 (56.1%) | 42 (44.7%) | 79 (49.4%) | 0.156 |
| Cardio exercise | 30 (45.5%) | 23 (24.5%) | 53 (33.1%) | 0.005 |
| Stretching exercise | 24 (36.4%) | 15 (16.0%) | 39 (24.4%) | 0.003 |
| Number of practiced exercise types | 1.7±0.8 | 1.4±0.7 | 1.5±0.8 | 0.004 |

Table 1 shows the demographic characteristics and exercise history among the studied women.

The most frequent age group was those aged 30-39 years (53.6%), followed by 20-29 years (32.5%), ≥40 years (10.5%), and lastly <20 years (3.4%).

The most frequent gestational age group was 13-28 weeks (50.8%), followed by 29-40 weeks (30.0%), and lastly <13 weeks (19.2%).

The most frequent number of pregnancies was three to five pregnancies (43.6%), followed by two pregnancies (24.9%), one pregnancy (16.8%), and lastly more than five pregnancies (14.8%).

The majority (74.4%) of the women had a university or higher education.

Approximately 36.2% of the women were employed; as a private sector employee (38.0%), a governmental employee (26.6%), teaching professionals (16.8%), health professionals (9.2%), and others (9.2%). Approximately 31.5% of the women were exercising regularly before pregnancy.

The practiced exercises included aerobic exercise (46.3%), resistance exercise (49.4%), cardio exercise (33.1%), and stretching exercise (24.4%). Compared with those who didn't exercise, those who were exercising during the current pregnancy had more frequent University or higher education (84.7% versus 67.4%, p<0.001), more frequent cardio and stretching exercises before pregnancy (45.5% versus 24.5%, p=0.005 and 36.4% versus 16.0%, p=0.003, respectively), but less frequent aerobic exercise before pregnancy (33.3% versus 55.3%, p=0.006).

**Table 2: Awareness of the presence of exercise during pregnancy by the status of exercise during pregnancy**

| | Exercised or were exercising during current pregnancy | | | P-value |
|---|---|---|---|---|
| | Yes | No | Total | |
| Awareness of exercise during pregnancy | | | | |
| No | 11 (16.7%) | 55 (58.5%) | 66 (41.3%) | <0.001 |
| Yes | 55 (83.3%) | 39 (41.5%) | 94 (58.8%) | |
| Type of awareness of exercise during pregnancy | | | | |
| Aerobic | 37 (66.1%) | 22 (56.4%) | 59 (62.1%) | 0.340 |
| Pelvic floor | 53 (96.4%) | 33 (84.6%) | 86 (91.5%) | 0.063 |
| Stretching | 47 (88.7%) | 26 (66.7%) | 73 (79.3%) | 0.010 |
| Breathing | 52 (94.5%) | 36 (92.3%) | 88 (93.6%) | 0.690 |
| Swimming | 19 (35.8%) | 11 (28.9%) | 30 (33.0%) | 0.490 |
| Back care | 43 (81.1%) | 22 (56.4%) | 65 (70.7%) | 0.010 |
| Number of known exercises | 4.6±1.4 | 3.9±1.8 | 4.3±1.6 | 0.078 |
| Sources of Awareness | | | | |
| Social media and advertisements | 52 (78.8%) | 60 (63.8%) | 112 (70.0%) | 0.042 |
| Doctors | 42 (63.6%) | 44 (46.8%) | 86 (53.8%) | 0.036 |
| Health centers | 16 (24.2%) | 20 (21.3%) | 36 (22.5%) | 0.658 |

| | | | | |
|---|---|---|---|---|
| Friends and colleagues | 23 (34.8%) | 29 (30.9%) | 52 (32.5%) | 0.595 |
| Books and magazines | 15 (22.7%) | 19 (20.2%) | 34 (21.3%) | 0.702 |
| Television | 1 (1.5%) | 1 (1.1%) | 2 (1.3%) | >0.99 |

Table 2 shows the awareness of the presence of exercise during pregnancy among the studied women. The majority (58.8%) of the women were aware of the presence of exercises during pregnancy.

These included breathing (93.6%), pelvic floor (91.5%), stretching (79.3%), back care (70.7%), aerobic (62.1%), and swimming (33.0%). Social media and advertisements were the main sources of such awareness (70.0%), followed by doctors (53.8%), friends and colleagues (32.5%), health centers (22.5%), books and magazines (21.3%), and lastly television (1.3%). Compared with those who didn't exercise, those who were exercising during the current pregnancy had more frequent awareness of exercise during pregnancy (83.3% versus 41.5%, p<0.001), especially stretching (88.7% versus 66.7%, p=0.010) and back care (81.1% versus 56.4%, p=0.010). Those who were exercising were more dependent on social media and advertisements (78.8% versus 63.8%, p=0.042) and doctors (63.6% versus 46.8%, p=0.036) as a source of information.

**Table 3: Knowlege about benefits of exercise during pregnancy by the status of exercise during pregnancy**

| | Exercised or were exercising during current pregnancy | | | P-value |
|---|---|---|---|---|
| | Yes | No | Total | |
| Benefits of exercising during pregnancy | | | | |
| No | 36 (17.7%) | 79 (25.9%) | 115 (22.6%) | 0.031 |
| Yes | 167 (82.3%) | 226 (74.1%) | 393 (77.4%) | |
| Number of perceived benefits | 5.2±2.5 | 4.1±2.7 | 4.5±2.7 | <0.001 |
| Benefit 1: Reduces risk of back pain during pregnancy | | | | |
| No | 34 (16.8%) | 77 (25.2%) | 111 (21.9%) | 0.072 |
| Yes | 133 (65.8%) | 176 (57.7%) | 309 (60.9%) | |
| May be | 35 (17.3%) | 52 (17.0%) | 87 (17.2%) | |
| Benefit 2: Prevents excessive weight gain during pregnancy | | | | |
| No | 35 (17.3%) | 90 (29.5%) | 125 (24.7%) | 0.006 |
| Yes | 135 (66.8%) | 167 (54.8%) | 302 (59.6%) | |
| May be | 32 (15.8%) | 48 (15.7%) | 80 (15.8%) | |
| Benefit 3: Strengthens pelvic floor muscles during pregnancy | | | | |
| No | 24 (11.9%) | 79 (26.1%) | 103 (20.4%) | <0.001 |
| Yes | 145 (71.8%) | 158 (52.1%) | 303 (60.0%) | |
| May be | 33 (16.3%) | 66 (21.8%) | 99 (19.6%) | |
| Benefit 4: Increased energy and stamina during pregnancy | | | | |
| No | 25 (12.4%) | 97 (31.8%) | 122 (24.1%) | <0.001 |
| Yes | 133 (65.8%) | 142 (46.6%) | 275 (54.2%) | |
| May be | 44 (21.8%) | 66 (21.6%) | 110 (21.7%) | |
| Benefit 5: Makes delivery easier/improves birth contractions | | | | |
| No | 22 (10.8%) | 73 (24.0%) | 95 (18.7%) | 0.001 |
| Yes | 142 (70.0%) | 174 (57.2%) | 316 (62.3%) | |
| May be | 39 (19.2%) | 57 (18.8%) | 96 (18.9%) | |
| Benefit 6: Ability to recover quickly after childbirth | | | | |
| No | 22 (10.9%) | 76 (24.9%) | 98 (19.3%) | <0.001 |
| Yes | 145 (71.8%) | 163 (53.4%) | 308 (60.7%) | |
| May be | 35 (17.3%) | 66 (21.6%) | 101 (19.9%) | |
| Benefit 7: Improvement of body awareness, posture, coordination, and balance during pregnancy | | | | |
| No | 21 (10.4%) | 87 (28.5%) | 108 (21.3%) | <0.001 |
| Yes | 140 (69.3%) | 147 (48.2%) | 287 (56.6%) | |
| May be | 41 (20.3%) | 71 (23.3%) | 112 (22.1%) | |

Table 3 shows the perceived benefits of exercise during pregnancy among the studied women.

The majority (77.4%) of the women perceived one or more benefits of exercising during pregnancy.

These included making delivery easier/improving birth contractions (62.3%), reducing the risk of back pain during pregnancy (60.9%), increasing the ability to recover quickly after childbirth (60.7%), strengthening pelvic floor muscles during pregnancy (60.0%), preventing excessive weight gain during pregnancy (59.6%), improving body awareness, posture, coordination, and balance during pregnancy (56.6%), and finally increasing energy and stamina during pregnancy (54.2%). Compared with those who didn't exercise, those who were exercising during current pregnancy had a higher frequency of perceived benefits (82.3% versus 74.1%, p=0.031) and a higher number of perceived benefits (5.2±2.5 versus 4.1±2.7, p<0.001).

The higher frequency of perceived benefits was significant (p<0.05) in all individual benefits with the exception of "reducing risk of back pain during pregnancy' (p=0.072).

**Table 4: Knowlege about barriers to practice exercises during pregnancy by the status of exercise during pregnancy**

| | Exercised or were exercising during current pregnancy | | | P-value |
|---|---|---|---|---|
| | Yes | No | Total | |
| Barriers to practice exercises during pregnancy | | | | |
| No | 131 (64.5%) | 156 (51.1%) | 287 (56.5%) | 0.003 |
| Yes | 72 (35.5%) | 149 (48.9%) | 221 (43.5%) | |
| Number of perceived barriers | 2.1±3.0 | 3.1±3.1 | 2.7±3.1 | 0.003 |
| Barrier 1: Chest pain | | | | |
| No | 124 (61.1%) | 140 (45.9%) | 264 (52.0%) | 0.001 |
| Yes | 50 (24.6%) | 124 (40.7%) | 174 (34.3%) | |
| May be | 29 (14.3%) | 41 (13.4%) | 70 (13.8%) | |
| Barrier 2: Difficulty breathing | | | | |
| No | 113 (55.7%) | 140 (46.1%) | 253 (49.9%) | 0.026 |
| Yes | 59 (29.1%) | 124 (40.8%) | 183 (36.1%) | |
| May be | 31 (15.3%) | 40 (13.2%) | 71 (14.0%) | |
| Barrier 3: Abdominal pain during pregnancy | | | | |
| No | 109 (53.7%) | 146 (47.9%) | 255 (50.2%) | 0.080 |
| Yes | 58 (28.6%) | 116 (38.0%) | 174 (34.3%) | |
| May be | 36 (17.7%) | 43 (14.1%) | 79 (15.6%) | |
| Barrier 4: Back pain during pregnancy | | | | |
| No | 117 (57.6%) | 145 (47.7%) | 262 (51.7%) | 0.077 |
| Yes | 57 (28.1%) | 111 (36.5%) | 168 (33.1%) | |
| May be | 29 (14.3%) | 48 (15.8%) | 77 (15.2%) | |
| Barrier 5: Uterine contractions during pregnancy | | | | |
| No | 99 (48.8%) | 132 (43.6%) | 231 (45.7%) | 0.006 |
| Yes | 61 (30.0%) | 130 (42.9%) | 191 (37.7%) | |
| May be | 43 (21.2%) | 41 (13.5%) | 84 (16.6%) | |
| Barrier 6: Vaginal bleeding during pregnancy | | | | |
| No | 103 (51.0%) | 138 (45.4%) | 241 (47.6%) | 0.002 |
| Yes | 51 (25.2%) | 120 (39.5%) | 171 (33.8%) | |
| May be | 48 (23.8%) | 46 (15.1%) | 94 (18.6%) | |
| Barrier 7: Premature birth | | | | |
| No | 109 (53.7%) | 138 (45.4%) | 247 (48.7%) | 0.005 |
| Yes | 53 (26.1%) | 121 (39.8%) | 174 (34.3%) | |
| May be | 41 (20.2%) | 45 (14.8%) | 86 (17.0%) | |

Table 4 shows the perceived barriers to practice exercises during pregnancy among the studied women. Less than half (43.5%) of the women perceived one or more barriers to practice exercises during pregnancy.

These included uterine contractions during pregnancy (37.7%), difficulty breathing (36.1%), chest pain (34.3%), abdominal pain during pregnancy (34.3%), premature birth (34.3%), vaginal bleeding during pregnancy (33.8%), and back pain during pregnancy (33.1%). Compared with those who didn't exercise, those who were exercising during the current pregnancy had a lower frequency of perceived barriers (35.5% versus 48.9%, p=0.003) and smaller number of perceived barriers (2.1±3.0 versus 3.1±3.1, p=0.003).

The lower frequency of perceived barriers was significant ($p<0.05$) in all individual barriers with the exception of abdominal and back pain during pregnancy (p=0.080 and p=0.077, respectively).

**Table 5: Attitude to practice or not to practice exercises during pregnancy by the status of exercise during pregnancy**

| | Exercised or were exercising during current pregnancy | | | P-value |
|---|---|---|---|---|
| | Yes | No | Total | |
| Do you think physical exercise during pregnancy is necessary? (attitude) | | | | |
| No | 21 (10.3%) | 205 (67.2%) | 226 (44.5%) | <0.001 |
| Yes | 182 (89.7%) | 100 (32.8%) | 282 (55.5%) | |
| Reasons physical exercise is necessary during pregnancy | | | | |
| Facilitates natural childbirth | 77 (42.3%) | 48 (48.5%) | 125 (44.5%) | 0.320 |
| Reduces disease risk during pregnancy | 67 (36.8%) | 36 (36.4%) | 103 (36.7%) | 0.940 |
| Fast recovery after childbirth | 38 (20.9%) | 15 (15.2%) | 53 (18.9%) | 0.241 |
| Reasons physical exercise is not necessary during pregnancy | | | | |
| I'm afraid of exercising during pregnancy | 25 (16.8%) | 95 (38.5%) | 120 (30.3%) | <0.001 |
| Important only in the ninth month | 86 (57.7%) | 20 (8.1%) | 106 (26.8%) | <0.001 |
| I don't like exercises | 12 (8.1%) | 51 (20.6%) | 63 (15.9%) | 0.001 |
| I feel tired | 18 (12.1%) | 24 (9.7%) | 42 (10.6%) | 0.459 |
| I don't have enough information about the exercises | 6 (4.0%) | 26 (10.5%) | 32 (8.1%) | 0.022 |
| Difficulty in transportation | 2 (1.3%) | 25 (10.1%) | 27 (6.8%) | 0.001 |
| I don't have time | 0 (0.0%) | 6 (2.4%) | 6 (1.5%) | 0.088 |

Table 5 shows the attitude to practice or not to practice exercises during pregnancy among the studied women. More than half (55.5%) of the women believed in the necessity of physical exercise during pregnancy.

The reasons given for the necessity of physical exercise during pregnancy included facilitating natural childbirth (44.5%), reducing the risk of diseases during pregnancy (36.7%), and facilitating rapid recovery after childbirth (18.9%).

The reasons given for the non-necessity of physical exercise during pregnancy included fear of exercising during pregnancy (30.3%), belief that its importance is only in the ninth month (26.8%), dislike exercises (15.9%), feeling tired (10.6%), lack of enough information about exercises (8.1%), difficulty in transportation (6.8%), limitation of time available (1.5%). Compared with those who didn't exercise, those who were exercising during current pregnancy had a stronger belief in the necessity of physical exercise during pregnancy (89.7% versus 32.8%, $p<0.001$) and different reasons for the non-necessity of physical exercise during pregnancy.

These include lower frequency of four reasons (fear of exercising during pregnancy, not like exercises, lack of enough information about exercises, and difficulty in transportation, $p<0.001$, $p=0.001$, $p=0.022$, and $p=0.001$, respectively) and higher frequency of one reason (belief that its importance is only in the ninth month, $p<0.001$).

***DISCUSSION:***

Regular physical activity has a positive effect on the mind and body of pregnant women and maternal and fetal outcomes.

The health care transformation is one of the eight themes of the national transformation program launched as outlined in Vision 2030.

Women and children care is considered one of the main six systems of care (SOC) that build the new model of car (MOC). The SOC is cut across different "service layers" to support people's health. However, to reach high-quality service it is important to explore the level of knowledge and acceptance of the population to create an effective pathway for new service.

This study has profound meaning in providing a database about pregnant women in the Maternity and children in Dammam concerning prenatal exercises. Our outcomes are considered as a baseline to help clinicians, especially physiotherapy practitioners to develop more specific programs for pregnant women.

The primary goal of this study was to estimate the prevalence and evaluate the knowledge, attitudes, and practices of Saudi pregnant women at Maternity and Children Hospital in Dammam (MCHD) concerning prenatal exercise.

This study included 503 pregnant women attending the physiotherapy clinic at MCHD. The participant number in the present study was higher than the sample size in a similar study conducted in Riyadh, Jazan, and AL-Hsa.

The findings indicate generally, high knowledge levels, positive attitudes, and reasonable levels of Exercise practicing. The present study revealed that the prevalence of practicing Ex's among pregnant women was 40.0% (n = 203). Regarding general knowledge levels, more than half of our sample (58.8%) had a high level of knowledge.

This finding was very close to the level of another study by Abu al Rahi et al.. in which most of the participants (69.5%) had with good knowledge level about prenatal exercise. Considering knowledge about exercise benefits and contraindications during pregnancy, our findings showed a significant increase in benefits knowledge (77.4%).

In particularization, pregnant women mention that exercise during pregnancy might Reduce back pain (60.9%), Prevent excessive weight gain (59.6%), Strengthen pelvic floor muscles (60.0%), Increase energy and during pregnancy (54.2%), Make delivery easier (62.3%), Ability to recover quickly after childbirth (60.7%), Improvement of body posture balance during pregnancy (56.6%).

These results show a very good knowledge relating to the benefits of prenatal exercise.

All the previously reported benefits were also mentioned in the study by Gari et al. 2022. conducted in Makkah, which consistent with our results. In the opposite of previous results, we found a much lower level of knowledge about exercise contraindications during pregnancy (43.5%). However, these differences in the level of knowledge may affected by the sources of information of our participants. Social media and advertisements were found to be the main source of information among our participants (70.0%), followed by doctors (53.8%).

While these results come in consistent with the findings of parallel studies 18,19. Still, it was unexpected results and considered a big challenge for doctors and healthcare providers, especially with the phenomenon of spreading misinformation on social media. Furthermore, a study conducted in Saudi Arabia has highlighted the lack of healthcare practitioner knowledge and awareness of the antenatal exercise guidelines.

Albahhar et al , in their study , indicated that most physicians (86.5%) were unaware of the guidelines and nearly half of them (55.2%) did not advise on exercise to their patients.

In the present study, Comparing the main findings with each other demonstrated a small gap between the level of knowledge and attitude of participants and their practice of prenatal Exercise.

Our results revealed that only 40.0% of pregnant women had practiced Exercise during pregnancy. While the level of knowledge and attitude were 58.8% and 55.5% respectively.

This gap was justified by some barriers mentioned by participants including fear of exercising during pregnancy (30.3%), belief that its importance is only in the ninth month (26.8%), dislike exercises (15.9%), feeling tired (10.6%), lack of enough information about exercises (8.1%), difficulty in transportation (6.8%), limitation of time available (1.5%). On the other hand, compared with those who didn't exercise, those who were practicing exercise during the current pregnancy had a significantly higher level of knowledge (83.3% versus 41.5%, $p<0.001$), and attitude (89.7% versus 32.8%, $p<0.001$).

A statistically significant association was found between knowledge and attitude and practicing prenatal Exercise .

***Conclusion :***

To our knowledge, this is the first study that provides a database for pregnant women behavior toward exercises in MCHD.

Moreover, it can give insight and baseline data for policymakers, the health care providers for future planning and emphasizing or developing antenatal physical exercise guidelines.

Generally, the knowledge of our women on exercise during pregnancy was high and their attitude was favorable. Few were practicing exercise in pregnancy.

The main reason for the reduced practice was a lack of awareness of the demerits of exercise in pregnancy. Based on the results, it is recommended that physical therapy specialists are important providers of care that contribute to the health and well-being of women throughout the perinatal period and beyond.

So, physical therapy specialists should be trained for and involved in active counseling regarding physical exercise and provide relevant advice regarding the frequency, intensity, and type of activities to be recommended to their patients, as well as to implement specific measures or precautions and to screen for eventual temporary or permanent contraindications to exercise.

Moreover, it is recommended that the focus be on increasing the awareness of other healthcare providers. In addition to giving attention to increasing community awareness.

***CONFLICT OF INTEREST :***

The authors report no conflict of interest. The results of the study are presented, honestly, and without fabrication, falsification, or inappropriate data manipulation.

***AUTHOR'S CONTRIBUTIONS:***

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Group1 - Conception and design, Analysis and interpretation of data

Group 2 - Drafting the article, Critical revision of the article

Group 3 - Final approval of the version to be published

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Group 1- Conception and design, Acquisition of data, Analysis of Data

Group 2 - Drafting the article, Revision of the article.

**ACKNOWLEDGEMENTS:**

This research was funded by the Scientific and Clinical Studies and Research Department Maternity and Children Hospital - Dammam (MCHD) Institutional Review Board operates according to NCBE and Saudi laws and regulations. (PT-2023-001).

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