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Research Paper

Knowledge, Attitudes, and Patterns of Antenatal Exercise among a Sample of Pregnant Women in Baghdad City/ 2020

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ABSTRACT:

BACKGROUND:

Regular exercise is one of the main factors in promoting a healthy lifestyle. Numerous benefits accompany physical activity during pregnancy. It will reduce the risk of excessive gestational weight gain and conditions such as gestational diabetes, preeclampsia, preterm birth, varicose veins, and deep vein thrombosis.

OBJECTIVE:

To assess the knowledge and attitude of pregnant women regarding appropriate exercise during the second and third trimesters of pregnancy, To describe the exercise patterns of these women during pregnancy, and to determine the factors that may be related to conducting an exercise during pregnancy.

PATIENTS AND METHODS:

A descriptive cross-sectional study was conducted at two primary healthcare centers in Baghdad during the period from March 2020 to January 2021. A Convenient sample of 200 women pregnant was included.

RESULTS:

Out of 200 pregnant women enrolled in the study (60%) had good knowledge, (24%) had a positive attitude, and (49.5%) practiced exercise. There were a significant association between practiced exercise and knowledge and between practiced exercise and attitude.

CONCLUSION:

The socio-demographic characteristics, obstetrical history and the source of information impacted the practiced exercise during pregnancy. Understanding the barriers to practiced exercise during pregnancy is essential to improving prenatal counseling regarding physical activity and informing interventions to promote healthy exercise during pregnancy.

KEYWORDS: Knowledge, Antenatal Exercise, Baghdad, Pregnancy

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INTRODUCTION:

Physical activity is defined as any bodily movement produced by the contraction of skeletal muscles[(1)]. Exercise is responsible for many benefits, such as reducing the risk of obesity and associated comorbidities, improving cardiorespiratory fitness, and resulting in greater longevity[(2)].

Antenatal exercises are exercises done during pregnancy, they help to develop a good posture and relieve minor discomforts such as backache, constipation, and insomnia[(3)].

In addition, they reduce the risk of excessive gestational weight gain and conditions such as gestational diabetes, preeclampsia, preterm birth, varicose veins, and deep vein thrombosis. Some evidence showed that conducting an exercise during pregnancy is responsible for a reduced length of labour and delivery complications[(4)]. On the other hand, psychologically, the benefits of exercising during pregnancy include reduced fatigue, stress, anxiety, and depression, as well as improved well-being[(5)].

Lack of physical activity is one of the essential factors for obesity after pregnancy, for that, all women of reproductive ages should start regular exercise to help them during pregnancy and delivery[(6)].

The idea of exercise during pregnancy has become more common over the past 20 years. It increased and encouraged the recommendation of involving exercise during pregnancy.

Studies reported that sedentary lifestyle pregnancy might cause many different kinds of diseases. Being active and doing exercise during pregnancy has proven to be advantageous, although pregnancy is associated with profound anatomical and physiological changes[7].

The Royal College of Obstetricians and Gynecologists advises that all pregnant women should do aerobic and strength-conditioning exercise beginning with 15 min of continuous exercise 3 times a week increasing gradually to 30 min 4 times a week and then daily.

Absolute contraindications to exercise included ruptured membranes, previous premature labour, unexplained persistent vaginal bleeding, placenta previa after 28 weeks gestation, preeclampsia, incompetent cervix, intrauterine growth restriction, and high-order multiple pregnancies (e.g., triplets). Relative contraindications include recurrent pregnancy loss, gestational hypertension, history of spontaneous preterm birth, mild/moderate cardiovascular or respiratory disease, symptomatic anaemia, malnutrition, eating disorder, and twin pregnancy after the 28th weeks[8, 9].

OBJECTIVES OF THE STUDY:

1. To assess the knowledge and attitude of pregnant women regarding appropriate exercise during the second and third trimesters of pregnancy.
2. To describe the exercise patterns of these women during pregnancy.
3. To determine the demographic and obstetrical factors related to knowledge, attitude, and practice regarding exercise during pregnancy.

Study design and setting: A descriptive cross-sectional study with was conducted in two primary healthcare centers in Baghdad between the 1st of March 2020 and the 31st of January 2021.

Sampling and inclusion criteria: A Convenient sample of 200 women in their second and third trimesters of pregnancy.

Exclusion criteria:

1. Multiple pregnancies
2. Women who have been medically advised to bed rest or minimize physical activity during pregnancy
3. Women with a history of any medical disease such as anaemia, diabetes, hypertension. Thyroid disease, respiratory disease or cardiovascular diseases with difficulty in breathing or chest pain during pregnancy.
4. History of low lying placenta, vaginal bleeding, premature labour during a previous pregnancy
5. Abdominal pain, including uterine contraction during pregnancy
6. Women with a history of infertility.

Data collection

Data were collected through interviews using a questionnaire specially designed for this study prepared by the researcher after reviewing similar studies[10, 11]. The questionnaire comprised five parts of which:

First part: included socio-demographic information of age, parity, educational level, occupations, income of pregnant, in addition to husband's education and occupation. As well, as source of information regarding exercise during pregnancy.

Second part: It is concerned with obstetrical history about the number of live children, previous type of delivery, and whether received antenatal care during the current pregnancy.

Third part: Consisted of ten true, false or do not know questions to assess knowledge of study group about different aspects of antenatal exercises.

Fourth part: Included questions to assess women's attitude. Answers included three Likert scale, agree, not-agree, or neutral response.

Fifth part: Encompassed questions about practicing antenatal exercise, the amount of exercise in which the pregnant women participated, and any obstacles to exercise routine.

Scoring system

The scale of the three levels was rated on the 3 points (Likert respondent scale) it was scored as scoring of agreed about by assigning a score of (3) for "Yes", (1) for "No" and score of (2) for "Don't know". The questions in knowledge or attitude were ten questions for each aspect, so the Minimum Score= 10, Maximum Score= 30, and the Median Score = 20.

A knowledge score of more than 75% was considered good (≥25 scores), 50-74% moderate (20-24 score), and less than 50% was taken as poor (<20 scores). While attitude score of more than 75% was positive good (≥25 scores), 50-74% neutral (20-24 score), and less than 50% was taken as negative (<20 scores)[12].

Ethical considerations

Approval to conduct the study was obtained from the scientific committee of the Department of Community and Family Medicine at Al-Nahrain

College of Medicine and the Iraqi Board of Medical Specializations. Women were asked to participate on a voluntary basis. All participants were assured of anonymity and confidentiality of responses.

Statistical analysis

Analysis of data carried out using the available Statistical Packages for Social Sciences (SPSS)-version 22. Data were presented in simple frequency, percentage, mean, standard deviation, and range (minimum-maximum values).

RESULTS:

The study sample comprised 200 mothers, with a mean (±SD) age of 26.9 (±6.9) years. About one-third of the mothers and their husbands had a university educational level of 65 (32.5%) and 69 (34.5%), respectively. However, most of them were housewives 119 (59.5%), and their husbands were self-employees 109 (54.5%) with 89 (44.5%) had a family income of less than 0.5 Million Iraqi Dinars (IQD) per month (Table 1).

Table 1: The socio-demographic characteristics of the sample (N=200).

		No.	%
Maternal age (years)	<20years	30	15.0
	20-24	47	23.5
	25-29	51	25.5
	30-34	42	21.0
	≥35years	30	15.0
	Mean±SD (Range)	26.9±6.9 (14-45)	
Education of wife	Primary	42	21.0
	Intermediate	32	16.0
	Secondary	33	16.5
	College	65	32.5
	Higher education	28	14.0
Education of husband	Primary	35	17.5
	Intermediate	38	19.0
	Secondary	30	15.0
	College	69	34.5
	Higher education	28	14.0
Occupation of wife	Governmental employee	72	36.0
	Self-employee	2	1.0
	Housewife	119	59.5
	Student	7	3.5
Occupation of husband	Governmental employee	89	44.5
	Self-employee	109	54.5
	Student	2	1.0
Income	<0.5 million IQD	89	44.5
	0.5-1 million IQD	108	54.0
	≥1.5 million IQD	3	1.5
Total		200	100.0

About one-third of the participants were gravidity two and para1 with one alive child, 62 (31%) and 69 (34.5%), respectively. Nearly half of the participants, 79 (51.0%), had experienced normal deliveries, and 29 (14.5%) reported miscarriage at least once, and almost all of them had received prenatal care 188 (94.0%) (Table 2).

Table 2: Obstetrical history of the study group (N=200).

Obstetrical history		N	%
Gravidity	Gravida 1	43	21.5
	Gravida 2	62	31.0
	Gravida 3	39	19.5
	Gravida 4	27	13.5
	Gravida 5	29	14.5
Parity	Primi	45	22.5
	Para 1	69	34.5
	Para 2	46	23.0
	Para 3	20	10.0
	Para 4 & more	20	10.0
Abortion	No abortion	161	80.5
	Single abortion	29	14.5
	Recurrent abortions	10	5.0
Number of alive children	No children	45	22.5
	One	69	34.5
	Two	47	23.5
	Three	21	10.5
	Four & more	18	9.0
Type of last previous delivery (N=155)	NVD	79	51.0
	Assisted delivery	19	12.3
	CS	57	36.8
Received ANC	Yes	188	94.0
	No	12	6.0

Figure -1 showed that 120 (60%) of participants had good knowledge about antenatal exercises.

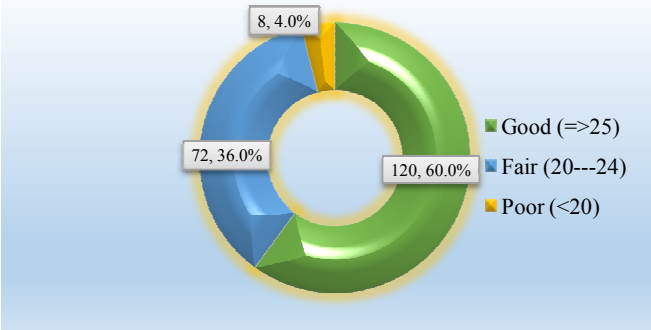

Figure 1: Distribution of the study group according to level of Knowledge.

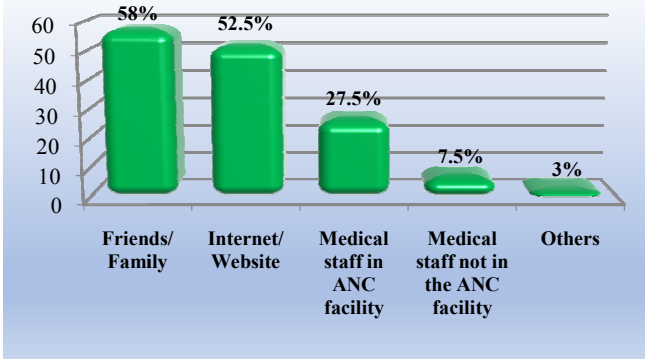

Figure 2: Source of information about antenatal exercise.

Among the study participants,48 (24.0%) of them had a positive (favourable) attitude based on the cutoff value of 25 or more with a mean± (SD) of attitude score was 22.2 (±3.6) and ranged (14-30) degrees (Figure 3).

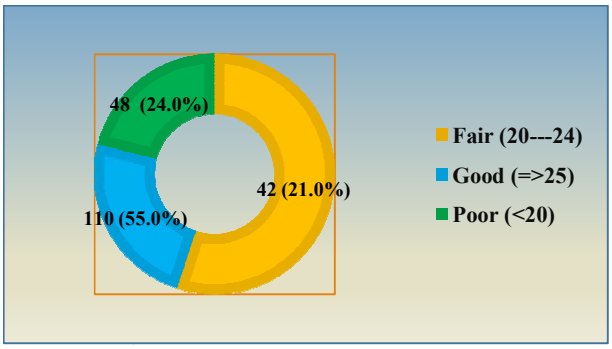

Figure 3: Attitude regarding exercise during pregnancy.

In this study, 101 (50.5%) of the participants were practiced exercise, which is mostly aerobic 42 (41.5%), and the least one was abdominal exercise 1 (0.5%), as shown in figure 4 and figure 5.

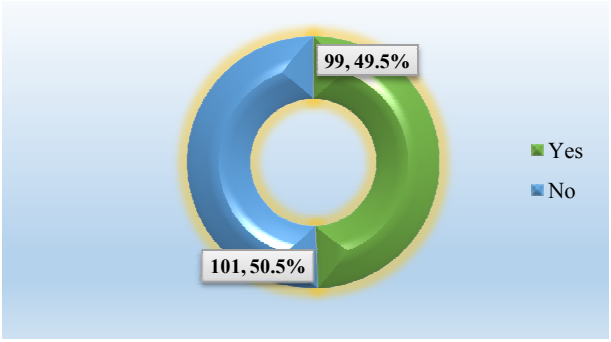

Figure 4: Practicing any type of exercise during pregnancy.

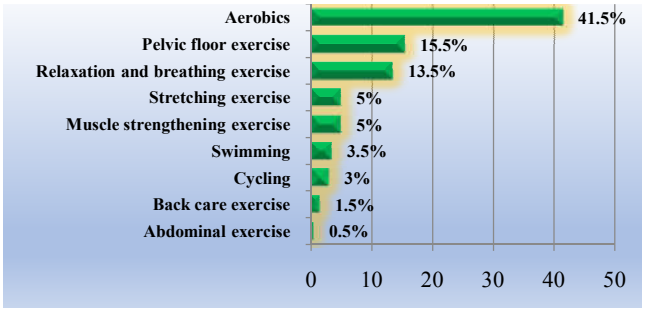

Figure 5: The types of exercises practiced.

Among 200 participants, only 47 (23.5%) got advice about practicing exercise. Only 69 (34.5%) of the sample practiced antenatal exercises in the previous pregnancy. Of the 99 (49.5%) of participants practicing antenatal exercises, 60 (60.6 %) of them practicing five days or more per week and 60 (63.6%) practicing for 30 min per day or more (Table 3).

Table 3: Characteristics of exercise during pregnancy.

Practicing any type of exercise during pregnancy		No	%
Have anyone advised you to practice exercise during antenatal care		47	23.5
During prenatal visits, did you receive advice to stop exercising or directed to slow down or decrease the intensity of exercising		36	18.0
Have you practiced exercise in a previous pregnancy		69	44.5
Have you practiced exercise before this pregnancy		66	33.0
Frequency of exercise (n=99)	<5days	39	39.4
	≥5days	60	60.6
Duration of exercise (n=99)	<30minutes	36	36.4
	≥30minutes	63	63.6

The major cause of not practicing antenatal exercises was afraid that antenatal exercises will harm the baby as stated by 23 (23.8%) , while 19 (19.8%) women mention they didn't know what antenatal exercises is(Figure 6).

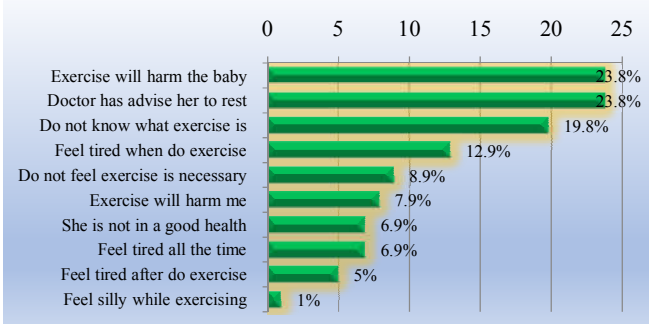

Figure 6: The barriers to not practicing antenatal exercise.

There was a significant association between the education of husbands and practicing exercise (P=0.014). A significant association was obtained between occupation and antenatal exercises (P-value 0.032).In addition, 53 (59.6%)of pregnant women with low income were not interested in antenatal exercises with significant association (P-value = 0.023) (Table 4).

Table 4: Distribution of the participants practicing antenatal exercises according to their socio-demographic characteristics.

Variables		Practicing exercise				P-value
		Yes (N=99)		No (N=101)		
		No	%	No	%	
Maternal age (years)	<20years	9	30.0	21	70.0	0.239
	20-24	25	53.2	22	46.8	
	25-29	26	51.0	25	49.0	
	30-34	23	54.8	19	45.2	
	≥35years	16	53.3	14	46.7	
Education of wife	Primary	15	35.7	27	64.3	0.089
	Intermediate	16	50.0	16	50.0	
	Secondary	13	39.4	20	60.6	
	College	39	60.0	26	40.0	
	Higher education	16	57.1	12	42.9	
Education of husband	Primary	16	45.7	19	54.3	0.014
	Intermediate	17	44.7	21	55.3	
	Secondary	8	26.7	22	73.3	
	College	44	63.8	25	36.2	
	Higher education	14	50.0	14	50.0	

Occupation of wife	Govern employee	41	56.9	31	43.1	0.032
	Self-employee	0	0	2	100.0	
	Housewife	52	43.7	67	56.3	
	Student	6	85.7	1	14.3	
Occupation of husband	Govern employee	50	56.2	39	43.8	0.236
	Self-employee	48	44.0	61	56.0	
	Student	1	50.0	1	50.0	
Income	<0.5 million IQD	36	40.4	53	59.6	0.023
	0.5-1 million IQD	60	55.6	48	44.4	
	≥1.5 million IQD	3	100.0	0	0	

**Significant Chi-Square test*

This study revealed that antenatal exercises was significantly associated with gravidity, parity, number of live children (P_values=0.024, 0.026, and 0.0.031, respectively) (Table 5).

Table 5: Practice exercise regarding the obstetrical history (N=200).

Variable		Practicing exercise				P-value
		Yes (N=99)		Not (N=101)		
		No	%	No	%	
Gravidity	Gravida 1	12	27.9	31	72.1	0.024*
	Gravida 2	33	53.2	29	46.8	
	Gravida 3	20	51.3	19	48.7	
	Gravida 4	16	59.3	11	40.7	
	Gravida ≥5	18	62.1	11	37.9	
Parity	Primi	13	28.9	32	71.1	0.026*
	Para 1	37	53.6	32	46.4	
	Para 2	24	52.2	22	47.8	
	Para 3	13	65.0	7	35.0	
	Para ≥4	12	60.0	8	40.0	
Abortion	No abortion	76	47.2	85	52.8	0.302
	Single abortion	16	55.2	13	44.8	
	Recurrent	7	70.0	3	30.0	
Number of alive children	No children	13	28.9	32	71.1	0.031*
	One	37	53.6	32	46.4	
	Two	25	53.2	22	46.8	
	Three	13	61.9	8	38.1	
	Four & more	11	61.1	7	38.9	
Received prenatal care during the current pregnancy	Yes	93	49.5	95	50.5	0.971
	No	6	50.0	6	50.0	
Type of last previous delivery	NVD	43	54.4	36	45.6	0.470
	Assisted delivery	13	68.4	6	31.6	
	CS	30	52.6	27	47.4	

**Significant Chi-Square test*

Among those practicing participants, this study revealed that 68 (64.8%) relied on the Internet to collect information regarding pregnancy and antenatal exercises (Table 6).

Table 6: Association between the Practicing exercise and source of information.

Source of information about pregnancy and exercise		Practicing exercise				P-value
		Yes (N=99)		Not (N=101)		
		No	%	No	%	
Internet/ Website	Yes	68	64.8	37	35.2	0.001
	No	31	32.6	64	67.4	
Friends/ Family	Yes	57	49.1	59	50.9	0.904
	No	42	50.0	42	50.0	
Medical staff in ANC facility	Yes	25	45.5	30	54.5	0.481
	No	74	51.0	71	49.0	
Medical staff not in the ANC facility	Yes	9	60.0	6	40.0	0.398
	No	90	48.6	95	51.4	
Others (years of school and general books)	Yes	4	66.7	2	33.3	0.393*
	No	95	49.2	99	50.8	

*Chi-Square test. * Fisher Exact test*

Knowledge had a significant association with practicing antenatal exercises as about 6 (75%) of the participants who didn't practice any exercise had poor poor knowledge (P-value=0.016). Also, women with poor attitudes were significantly less practicing antenatal exercises 30 (71.4%), while 36 (75%) of the participants with high attitudes were practicing antenatal exercises (P=0.0001). As shown in table 7.

Table 7: Distribution of knowledge, attitude and their relationship in practicing antenatal exercises.

Variable		Practicing exercise				P-value
		Yes (N=99)		Not (N=101)		
		No	%	No	%	
Knowledge Score (10 Q)	Poor	2	25.0	6	75.0	0.016
	Fair	28	38.9	44	61.1	
	Good	69	57.5	51	42.5	
Attitude Score (10 Q)	Poor	12	28.6	30	71.4	0.001
	Fair	51	46.4	59	53.6	
	Good	36	75.0	12	25.0	
Have anyone advised you to practice exercise during antenatal care	Yes	36	76.6	11	23.4	0.001
	No	63	41.2	90	58.8	
During prenatal visits, she receives advice to stop exercising, or directed to slow down or decrease the intensity of exercising	Yes	17	47.2	19	52.8	0.763
	No	82	50.0	82	50.0	
Have you practiced exercise in a previous pregnancy	Yes	59	85.5	10	14.5	0.001
	No	40	30.5	91	69.5	
Have you practiced exercise before this pregnancy	Yes	56	84.8	10	15.2	0.001
	No	43	32.1	91	67.9	

**Significant χ2-test*

DISCUSSION:

Safe maternity with improved neonatal outcomes is predicated on proper antenatal care services, and exercise has become a fundamental aspect of women's lives and an essential constituent of antenatal care[13]. Best to our best knowledge, this is the first study in Baghdad to highlight the knowledge, attitude, and practice of exercise in pregnancy.

The main finding of the current study was 60% of the participants had good knowledge about antenatal exercises. This is inconsistent with another Iraqi study done in Erbil 2017 and revealed 93% of the participant had poor[14]. In comparison to other studies, Chidozie E. Mbada et al. found that 46.6% of Nigerian participant had good knowledge of antenatal exercises[13]. In contrast, another Nigerian study revealed that only 11.3 of the participant had good knowledge[15]. Study from Saudi Arabia revealed that 49.32% of pregnant women had a low level of knowledge as they answered less than 50% of questions[16], this percent is higher than the percent of the participant in the current study who obtained poor level of knowledge that comprised only 4% as they answer less than 50% of the questions. The good knowledge could be due to the educational level of the participants that was significantly associated with their

knowledge as 46.5% were college or higher graduates.

A positive attitude found in 24% of the participants, while a positive or negative attitude was 21%. Compared to another study from Sri Lanka, 35.5% of the participants had a favorable, and 15% had a positive attitude[17]. Another study was done in Pakistan and revealed that 12.8% of the participant had a positive attitude[18]. A higher rate of positive attitude was obtained by study from Ethiopia, as 55.3% had a positive attitude[11]. This was related to wrong believes about antenatal exercises in our society.

Regarding practice, 49.5% of study participants were practiced exercise, it is higher than other studies, in Ethiopia (36.4%), and Iran (39 %) of participant practiced exercise during pregnancy[11, 19].

The results from the current study show a significant association between practiced exercise and knowledge as well as between practiced exercise and attitude. The same findings were obtained by Chidozie E. Mbada et al. in Nigeria[13] and Esmat Noohi et al. in Iran[20].

In Ethiopia, despite a significant association between practiced exercise and knowledge, it was insignificant between practiced exercise and attitude[11]. This finding may be justified that better knowledge can lead to a positive attitude and subsequently in good practices.

A significantly higher rate of the practiced exercise was obtained in those who had advice to practice exercise during the antenatal period, practiced exercise in the previous pregnancy, and practiced exercise before this pregnancy. Similar findings were obtained by previous study in Ethiopia[11].

There was a significant association between practice exercise and the education of husbands, occupation of the participants, monthly income, gravidity, parity, and the number of children. Prior study in Brazil showed a significant association with educational level, occupation, and parity[21], while Ghadi M. Al-Youbi revealed no significant association between and socio-demographic or obstetric characteristics except the number of children[16]. This variation may be due to the influence of each participant's own experience, source of knowledge, time, and facilities, as the percent of the participant who was practicing exercise increased with increasing parity, gravidity, number of children, and monthly income.

Regarding the source of information, family and friends were the main sources of informations, followed by the Internet as 68% of those using the internet/web as a source of information practiced exercise in contrast to 31% in those who did not use internet/website with a significant association. Television, books, and magazines were the main sources of participant information in other studies from Brazil[10] and Sri Lanka[17]. Highly percent of the educated participant in the current study and easily accessible and popularity of the Internet as a source of information in Iraq may be the causes of this result

The major cause of not practicing antenatal exercises was afraid that the exercise would harm the baby, followed by the doctor advice to take a rest as a second cause. The feeling of tiredness when doing exercise was the main barrier to not practicing antenatal exercises in other studies [17, 18, 22, 23]. In contrast, in other studies in Brazil and Saudi Arabia, lack of time was the main barrier[10, 24]. Old and wrong believes may be the cause of these results.

CONCLUSION:

1. The socio-demographic and obstetrical characteristics, besides the source of information affect the practiced exercise during pregnancy.
2. The practiced exercise is significantly associated with knowledge, attitude, and previous experience of exercise or physical activities.
3. Understanding the barriers to practiced exercise during pregnancy is essential to improving prenatal counseling regarding physical activity and informing interventions to promote healthy exercise levels.

RECOMMENDATIONS

Measures should be taken to improve women's knowledge, attitude, and practices regarding antenatal exercises through schools and universities, antenatal visits, healthcare providers, and the popular media.

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