

Pregnant Women's Perception of Physical Activity During Pregnancy at Primary Health Care Centers in Baghdad City

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Abstract: *A descriptive correlational design was used in this study to: (1) assess pregnant women's perception of regular physical exercise during pregnancy, (2) find out the association between pregnant women's age, socioeconomic status (SES), some reproductive variables and these women's perception of regular physical exercise during pregnancy, and (3) investigate the differences in pregnant women's perception of regular physical exercise during pregnancy in terms of age, level of education, SES, some reproductive variables groups. A convenience sample of (180) pregnant women who were selected from (13) primary health care centers located in both sides of Baghdad City were recruited to participate in this study. A self-reported questionnaire that includes two parts; the first part includes participants' age, socioeconomic status, the second part examines pregnant women's perception of engaging in regular physical exercise during pregnancy. The study results revealed that more than half of participants have somewhat sound perception of physical exercise. Furthermore, there are significant associations between participants' socioeconomic status and their perception of physical exercise. Moreover, women of upper high SE class have a sounder perception of regular physical exercise during pregnancy than those who are of upper middle SE class. There is a significant difference in perception of physical exercise among women's SE class groups. The researcher recommends community health nurses to collaborate with other agencies in Iraq to establish campaigns that aim to increase population awareness of the vital role of regular physical exercise during pregnancy.*

Keywords: Women's Perception of Physical Activity, Pregnancy

1. Introduction

Physical activity is defined as any bodily movement produced by skeletal muscles that requires energy expenditure. Physical inactivity (lack of physical activity) has been identified as the fourth leading risk factor for global mortality causing an estimated 3.2 million deaths globally [1].

Regular moderate intensity physical activity – such as walking, cycling, or participating in sports – has significant benefits for health. For instance, it can reduce the risk of cardiovascular diseases, diabetes, colon and breast cancer, and depression. Moreover, adequate levels of physical activity will decrease the risk of a hip or vertebral fracture and help control weight [1].

In the past, pregnant women were discouraged from exercise; however, it is now well established that participation in regular exercise during pregnancy can have many health benefits for both the mother and her child [2].

The term "physical activity" should not be mistaken with "exercise". Exercise, is a subcategory of physical activity that is planned, structured, repetitive, and purposeful in the sense that the improvement or maintenance of one or more components of physical fitness is the objective [3].

Historically, pregnancy was regarded as a state of confinement. More recently, however, research has demonstrated many potential health benefits of aerobic and strength-conditioning exercise in pregnancy and the

postpartum period. It is now considered safe, and even advisable, for otherwise healthy pregnant women to initiate or continue an active lifestyle during pregnancy [4].

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International health authorities recommend healthy pregnant women to be physically active at least 30 min per day, because physical activity during pregnancy is considered to have a beneficial effect on health in relation to disorders such as gestational diabetes, preeclampsia, gestational hypertension and the gaining of weight more than recommended level [5].

In 2002, ACOG issued a statement promoting the health benefits and safety of exercise in pregnancy for both previously active and inactive women (assuming medical clearance and no contraindications are present). These recommendations of 30 minutes or more of moderate exercise on most, if not all, days of the week were reaffirmed by ACOG in 2009 [6].

ACOG published recommendations for the safe practice of water or ground-based physical activities during pregnancy. In accordance with these recommendations, irrespective of the pregnant woman's physical fitness level, exercise should

be low-impact, moderate-intensity and regular. Sedentary women should increase their activities gradually and progressively [7].

The issue of physical activity of pregnant women, including determining proper recommendations, has been a broadly discussed topic in international circles. Nowadays, medical advances and broader knowledge based on extensive research have resulted in general acceptance and appreciation for physical activity during pregnancy [8].

Despite the numerous benefits and apparent recommendations, many pregnant women remain largely inactive. Furthermore, adherence to PA guidelines and engagement in any moderate intensity PA is seen to significantly decline throughout the course of pregnancy, further reducing the chances of pregnant women attaining the health benefits of an active lifestyle. From a range of qualitative studies across the world, the main barrier to participation in antenatal PA is risk perception, where women are worried that engagement in PA will put their pregnancy and baby at risk [9].

This study aims to (1) To assess pregnant women's perception of physical activity during pregnancy, (2) find out the association between pregnant women's age, socioeconomic status (SES), and health parameters of pre-gravid Body Mass Index (BMI), current BMI, gravida, para, number of abortion, gestational week, and these women's perception of physical activity during pregnancy, and (3) investigate possible differences in pregnant women's perception of physical activity during pregnancy in terms of age groups, level of education groups, and SES groups, pre-gravid BMI groups, gravida groups, para groups, number of abortion groups, trimester groups, and the general health status groups.

2. Methodology

Study Design: A descriptive correlational design was used in this study. The study was carried out in primary health care centers that are distributed across Al-Karkh and Al-Russafa sectors in Baghdad City.

Study Sample: A convenience sample of (180) pregnant woman were selected from the aforementioned primary health care centers in Baghdad City. In this sampling approach, participants were included in the study since they happened to be in the right place at the right time [10].

Power Analysis: Based on an anticipated effect size of (0.15), a desired statistical power level of (0.90), (13) predictors "independent variables", and a probability level of (0.05), the minimum required sample size would be 162.

Study Instrument:

The study instrument includes two parts; the first part includes participants' age, socioeconomic status which was measured by a scale constructed by Aggarwal and others [11]. This scale was tweaked by the researcher by excluding some items that are inappropriate to the Iraqi culture. The

score of this scale ranges between 7 and 68. It encompasses six levels of upper high ≥ 51 , high (41-50), upper middle (31-40), lower middle (21-30), poor (10-20), and very poor ≤ 7 . Moreover, the first part includes participants' BMI before pregnancy which is calculated through dividing the body weight (kg) on height (m^2). This measure includes five levels; underweight < 18.5 , normal body weight or BMI (18.5-24.9), overweight (25-29.9), obesity (30-34.9), and morbid obesity ≥ 35 [12]. Furthermore, this includes gestational description of subject's para, gravida, their distribution across pregnancy trimester, perception of their overall current health status, and existence of any chronic health problem or disease.

The second part of the study instrument examines pregnant women's perception of engaging in regular physical exercise during pregnancy. This scale is a 5-point Likert type scale. These items were measured on a 7-point Likert scale that is composed of 23 items. Responses on this scale range from 1 to 7. Four items are rated as 1 for (*Not true at all*) to 7 (*Very true*), one item is rated as 1 for (*Harmful*) to 7 for (*Beneficial*), one item is rated as 1 for (*Undesirable*) to 7 for (*Desirable*), one item is rated as 1 for (*Detrimental*) to 7 for (*Valuable*), one item is rated as 1 for (*Risky*) to 7 for (*Safe*), one item is rated as 1 for (*Unpleasant*) to 7 for (*Pleasant*), one item is rated as 1 for (*Not enjoyable*) to 7 for (*Enjoyable*), one item is rated as 1 for (*Uncomfortable*) to 7 for (*Comfortable*), one item is rated as 1 for (*Boring*) to 7 for (*Interesting*), seven items are rated as 1 for (*Strongly disagree*) to 7 for (*Strongly agree*), one item is rated as 1 for (*Very difficult*) to 7 for (*Very easy*), and one item is rated as 1 for (*Definitely not*) to 7 for (*Definitely will*). Total scores range from 23 to 161, with a higher score indicating a sounder perception of engaging in regular physical exercise during pregnancy.

Methods of Data Collection

Data were collected through utilization of the assessment tool and the structured interview technique with each pregnant woman as means of data collection process. The data collection is initiated from March 24th, 2017 to May 5th, 2017. The time required for each woman to complete answering the study questionnaire was (12-16) minutes.

Reliability of the Study Instrument

To determine the study instrument internal consistency reliability, a pilot study was conducted on (12) participants who later are excluded from the original study sample. Cronbach's Alpha is computed through the split-half technique. The scores of Pregnant Women's Perception of Engaging in Regular Physical Exercise During Pregnancy were .957 for part I (12) items, and .837 for part II (11) items).

Validity of the Study Instrument

Content validity of the assessment tool was determined through panel of (12) experts. The experts were asked to review a copy of the study instrument to determine its content clarity, items relevancy and adequacy. Their responses

indicated that the assessment tool was clearly stated; its items reflect the phenomenon underlying the study adequately.

Data Analyses

Data were analyzed using the IBM Statistical Package for Social Science (SPSS) version 24 for Windows®. Descriptive statistical measures of frequency, percentage, mean, and standard deviation were used to demonstrate the participants' sociodemographic characteristics. Inferential statistical measure of linear regression was used to measure variables that can determine women's predisposition to engage or disengage in regular physical activity during pregnancy. The nonparametric tests include Kruskal-Wallis test which was used to investigate possible differences of the data distributions between and among groups.

Limitations of the Study

Throughout the course of the present study, the following limitations were encountered (1) poor women's cooperation concerning responding to participate in this study, (2) the schedule of attendance for pregnant women at primary health care centers was another limitation in this study. Because this schedule was assigned at different days in each primary health care center. So, it was difficult to collect data, and (3) the official permissions were delayed which was a time wasting.

3. Study Results

Table 1: Participants' Sociodemographic and Obstetric Descriptive Statistics (N= 180)

Variables	Frequency	Percent
Age: Mean = 25.28 ± 5.7		
15-24	81	45.0
25-33	80	44.4
34-42	19	10.6
Socioeconomic Status: Mean 33.73 ± 7.5		
Lower Middle Class	36	20.0
Upper Middle Class	89	49.4
High Class	46	25.6
Upper High Class	9	5.0
BMI Before Pregnancy: Mean= 25.13±4.2		
Underweight	4	2.2
Normal	98	54.4
Overweight	53	29.9
Obesity	19	10.6
Morbid Obesity	6	3.3
Gravida: Mean= 2.5±1.6		
1	56	31.1
2	50	27.8
3	34	18.9
4-5	31	17.2
6 pregnancies or above	9	5.0
Para: 1.2±1.2		
None	59	32.8
1	58	32.2
2	35	19.4
3	18	10.0
4	10	5.6

This table reveals that the age mean is 25.28 ± 5.7; less than half are within the age group of 15-24 years-old ($n = 81$; 45.0%), followed by those who are in the age group of (25-33) years-old ($n = 80$; 44.4%), and those in the age group of (34-42_ years-old ($n = 19$; 10.6%).

Concerning the socioeconomic status (SES); around half are of upper middle class ($n = 89$; 49.4%), followed by those who are of high class ($n = 46$; 25.6%); those who are of lower middle class ($n = 36$; 20.0%), and those who are of upper high class ($n = 9$; 5.0%).

Regarding participants' BIM before pregnancy, the BMI means is 25.13±4.2; more than half are normal in weight-to-height ratio ($n = 98$; 54.4%), followed by those who are overweight ($n = 53$; 29.9%), those who are obese ($n = 19$; 10.6%), those who are morbidly obese ($n = 6$; 3.3%), and those who are underweight ($n = 4$; 2.2%).

With respect to gravida, the gravida mean is 2.5±1.6; less than third are primigravida ($n = 56$; 31.1%), followed by those who are pregnant for the second time ($n = 50$; 27.8%), those who are pregnant for the third time ($n = 34$; 18.9%), those who have 4-5 pregnancies ($n = 31$; 17.2%), and those who have six pregnancies or above ($n = 9$; 5.0%).

Lastly, the para mean is 1.2±1.2; less than third are nullipara ($n = 59$; 32.8%), followed by those who have one delivery ($n = 58$; 32.2%), those who have two deliveries ($n = 35$; 19.4%), those who have three deliveries ($n = 18$; 10.0%), and those who have four deliveries ($n = 10$; 5.6%).

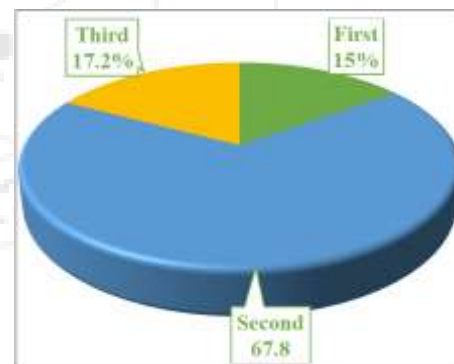


Figure 1: Participants' Distribution according to Pregnancy Trimester

The mean gestational duration is 20.56 ± 6.75. This figure illustrates that most of study participants are in the second trimester ($n = 122$; 67.8%), followed by those who are in the third trimester ($n = 31$; 17.2%), and those who are in the first trimester ($n = 27$; 15.0%).

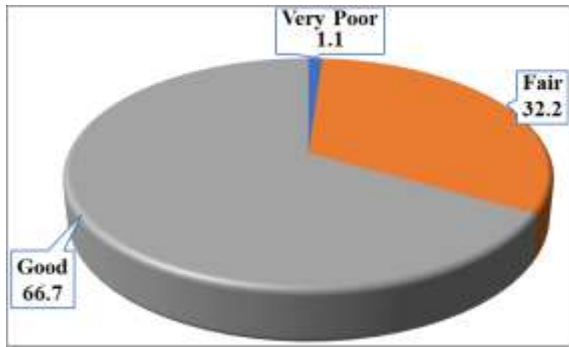


Figure 2: Perception of Overall Health

Figure (2) demonstrates that most of study participants perceive their overall health as very good ($n = 120$; 66.7%), followed by those who perceive their overall health as fair ($n = 58$; 32.2%), and those who perceive their overall health as very poor ($n = 2$; 1.1%).

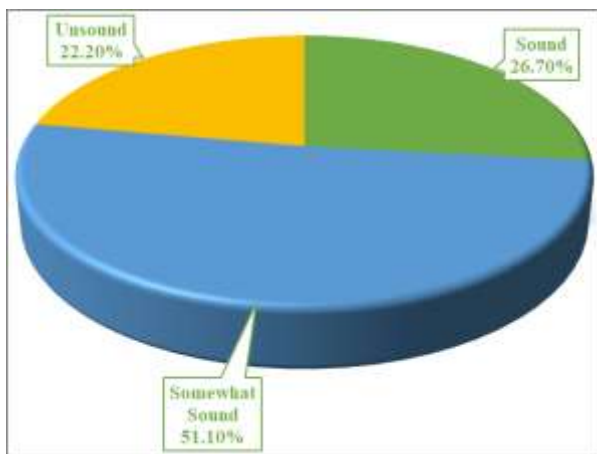


Figure 3: Participants' Exercise Perception

Figure (3) demonstrates that more than half of participants have somewhat sound perception of physical exercise ($n = 92$; 51.1%), followed by those who have a sound perception of physical exercise (48; 26.7%), and those who have unsound perception of physical exercise ($n = 40$; 22.2%).

Table 2: Association between Study Variables and Perception

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Age	-.394	.557	-.078	-.708	.480
SES	.996	.310	.265	3.210	.002
Weight Gained	-.150	.404	-.033	-.372	.710
Before Pregnancy BMI	.086	.624	.012	.137	.891
Current BMI	-.025	.109	-.019	-.233	.816
Gravida	-43.341	29.112	-2.346	-1.489	.138
Para	45.578	29.169	1.996	1.563	.120
Number of Abortions	39.205	28.983	.840	1.353	.178
Gestational Age	-.291	.385	-.068	-.756	.451

Table (2) displays that there is a significant association between participants' socioeconomic status and their perception of physical exercise (p -value = .002).

Table 3: Differences in Exercise Perception among the Age Groups

	Ranks			Chi-Square	df	Asymp. Sig.
	Age Group	N	Mean Rank			
Exercise Perception	15-24	81	93.10	1.347	2	.510
	25-33	80	85.84			
	34-42	19	99.00			
	Total	180				

Table (3) displays that pregnant women of the age group of (34-42) enjoy a healthier lifestyle than those who are of the age group of (15-24), and those who are of the age group of (25-33) respectively. However, there is no statistically significant difference in pregnant women's perception to physical exercise among the age groups.

Table 4: Differences in Exercise Perception among Wife's Level of Education

	Ranks			χ^2	df	Asymp. Sig.
	Wife's Level of Education	N	Mean Rank			
Exercise Perception	Reads and writes	15	65.33	11.941	5	.036
	Elementary school graduate	40	74.39			
	Middle school graduate	44	96.86			
	High School Graduate	21	95.71			
	Diploma	12	118.38			
	College Graduate	46	93.11			
	Total	178				

Table (4) demonstrates that pregnant women who hold Diploma degree have the soundest perception of regular physical exercise during pregnancy, followed by those who are Intermediate school graduate, those who are High school graduate, those who hold Bachelor's degree, those are Elementary school graduate, and those who can read and write respectively. There are statistically significant differences in pregnant women's perception of regular physical exercise during pregnancy among their level of education groups ($\text{Chi-square} = 11.941$, $\text{df} = 5$, p -value = .036).

Table 5: Differences in Exercise Perception among Husbands' Level of Education

	Ranks			χ^2	df	Asymp. Sig.
	Husband's Level of Education	N	Mean Rank			
Exercise Perception	Reads and writes	11	56.00	16.443	6	.012
	Elementary school graduate	38	72.58			
	Middle school graduate	44	91.00			
	High School Graduate	19	111.68			
	Diploma	20	96.83			
	College Graduate	40	105.49			
	Graduate Degree	8	79.25			
	Total	180				

Table (5) exhibits that pregnant women whose husbands are High school graduate have the soundest perception of regular exercise during pregnancy, followed by those whose

husbands hold Bachelor's degree, those whose husbands hold Diploma degree, those whose husbands are Intermediate school graduate, those whose husbands are Elementary school graduate, and those whose husbands can read and write. There are statistically significant differences in pregnant women's perception of regular exercise during pregnancy among their husbands' level of education groups (Chi-square = 16.443, df = 6, p-value = .012).

Table 6: Differences in Exercise Perception among the SEC Groups

Ranks				χ^2	df	Asymp. Sig.
SES	N	Mean Rank				
Exercise Perception	Lower Middle	36	61.89	15.134	3	.002
	Upper Middle	89	96.35			
	High	46	96.05			
	Upper High	9	118.67			
	Total	180				

Table (6) exhibits that pregnant women of upper high SE class have a sounder perception of regular physical exercise during pregnancy than those who are of upper middle SE class, those who are of high SE class, and those who are of lower middle SE class respectively. There are statistically significant differences in perception of physical exercise among pregnant women's SE class groups ($\chi^2 = 15.134$, df = 3, p-value = .002). This indicates that the higher the SE class, the healthier the perception of physical exercise.

Table 7: Differences in Exercise Perception among BMI groups

Ranks				χ^2	df	Asymp. Sig.
BMI	N	Mean Rank				
Exercise Perception	Normal	98	93.04	1.787	3	.618
	Overweight	53	82.74			
	Obesity	19	81.92			
	Morbid Obesity	6	86.08			
	Total	176				

Table (7) reveals that pregnant women who have normal body weight enjoy a healthier lifestyle than those who are morbidly obese, those who are overweight, and those who are obese respectively. However, there is no statistically significant difference in pregnant women's perception of physical exercise among the BMI groups. Participants who are underweight were excluded because of their limited number.

Table 8: Differences in Exercise Perception among Gravida Groups

Ranks				χ^2	df	Asymp. Sig.
Gravida	N	Mean Rank				
Exercise Perception	1	56	98.04	2.608	4	.625
	2	50	82.96			
	3	34	93.03			
	4-5	31	88.95			
	≥ 6	9	81.28			
	Total	180				

Table (8) demonstrates that pregnant women who have one pregnancy enjoy a sounder perception of engaging in regular physical exercise during pregnancy than those who have three pregnancies, those who have 4-5 pregnancies, those

who have two pregnancies, and those who have six or more pregnancies respectively. However, there is no statistically significant difference in pregnant women's perception of physical exercise among the gravida groups.

Table 9: Exercise Perception among Pregnancy Trimester Groups

Ranks				Chi-Square	df	Asymp. Sig.
Gestation Trimester	N	Mean Rank				
Exercise Perception	First	27	97.13	1.436	2	.488
	Second	122	91.37			
	Third	31	81.31			
	Total	180				

Table (9) exhibits that pregnant women who are in the first trimester enjoy a sounder perception of engaging in regular physical exercise during pregnancy than those who are in the second trimester, and those who are in the third trimester respectively. However, there is no statistically significant difference in pregnant women's perception of physical exercise among the pregnancy trimester groups.

Table 10: Exercise Perception between General Health Status Groups

Ranks				Chi-Square	df	Asymp. Sig.
Perception of Overall Health	N	Mean Rank				
Exercise Perception	Fair	58	86.94	.212	1	.645
	Good	120	90.74			
	Total	178				

Table (10) reveals that pregnant women who perceived their general health status as "good" have a sounder perception of regular physical exercise during pregnancy than those who perceived their general health status as "fair". However, there is no statistically significant differences in pregnant women's perception of regular physical exercise during pregnancy between the general health status groups (Chi-square = .212, df = 1, p-value = .645). Participants who perceived their general health status as "very poor" ($n = 2$) were excluded from this analysis because of their few number.

Discussion

There is a significant association between participants' socioeconomic status and their perception of physical exercise. These results indicated that the socioeconomic status influenced on women's perception of physical activity and exercise positively. Therefore, pregnant women who have a higher SES will be easier to participate in physical exercise. Financially, they could get gyms, sport instruments, sport coach, health practitioners and recreational activities. This finding is supported by Nascimento [13] who reported that high socioeconomic status positively related to exercise. There are statistically significant differences in pregnant women's perception of regular physical exercise during pregnancy among their level of education groups. Pregnant women's level of education significantly effects on their perception of regular physical exercise during pregnancy. Thus, the higher level of education, the higher level of perception of regular physical exercise. Also, pregnant women with a higher level of education have more knowledge and awareness about physical exercise benefits

during pregnancy. This finding is consistent with that obtained by Sujindra [14] who presented that pregnant women's education has a positive impact on their perception toward physical activity.

Moreover, Ribeiro [7] demonstrated that women with a higher education level and income engaged in more sports. This could be attributed to that they are better informed about and better comprehend the value of the exercise in pregnancy.

There are statistically significant differences in pregnant women's perception of regular exercise during pregnancy among their husbands' level of education groups. This could be explained as that pregnant women can be influenced by their husband's level of education because they consider their husbands as a source of advice, and their husbands could encourage them to practice tolerated physical exercise during pregnancy.

Women of upper high SE class enjoy a healthier lifestyle than those who are of upper middle SE class, those who are of high SE class, and those who are of lower middle SE class respectively. This indicates that the higher the SE class, the healthier the perception of physical exercise.

The higher the SE class, the healthier the perception of physical exercise. This could be attributed to that women who have the higher SE status could be of a higher level of income and education. So that, they are having much awareness and perception about physical exercise. Also, they are having more enablers to participate in the gym and recreational activities.

A supportive study by Paul [15] who reported that, the data from high income women serve as a comparison to highlight the distinct differences in behaviors and underlying beliefs that put low income women at high risk for excessive GWG. Low income women possessed several beliefs related to poor diet and physical inactivity in general, these beliefs such as that, physical activity is activity associated with daily living, not exercise.

Another supportive evidence was obtained by Gaston, Cramp, Gaston, and Cramp [16] who indicated that, while the relationship between exercise and a variety of demographic variables were examined, only a few stood out as consistent predictors of greater exercise. These included having a higher education and income. Consistently, Groth & Morrison-Beedy [17] demonstrated that low-income, pregnant, African American women reported decreased physical activity levels due to low levels of energy and a lack of motivation.

Women who have normal weight-to-height ratio enjoy a healthier lifestyle than those who are morbidly obese, those who are overweight, and those who are obese respectively. This could be explained as those women who have normal body weight usually following healthy lifestyle and patterns such as physical activity or exercise and healthy diet. This finding is supported by Fell, Joseph, Armson, & Dodds [18] who reported that a higher pre-pregnancy BMI were significantly more likely to discontinue sports and exercise

during pregnancy. Furthermore, de Jersey [19] reported that it is likely that higher maternal BMI is associated with lower socioeconomic standing, and general advice may be insufficient to overcome specific barriers to engaging in healthy lifestyles. On the other hand, Hinton reported that higher BMI was associated with increased activity [20].

Women who have one pregnancy enjoy a healthier lifestyle than those who have three pregnancies, those who have 4-5 pregnancies, those who have two pregnancies, and those who have six or more pregnancies respectively. This could be attributed to that more pregnancies entails many barriers such as no leisure time, more responsibilities on the pregnant and others. This finding is supported by Ribeiro [7] who demonstrated that the practice of physical activity during pregnancy was significantly higher among women who had had fewer pregnancies, nulliparas being the group of women who were most likely to exercise.

Another supportive study was obtained by Hegaard [21] who indicated that the parity influences the level of physical activity during pregnancy. On the other hand, PUT (2015) reported that multiparous women were more physically active than nulliparous ones. Women are better adapted to physical changes during pregnancy after one or more deliveries and are more likely to remain active.

Pregnant women who are in the first trimester enjoy a sounder perception of engaging in regular physical exercise during pregnancy than those who are in the second trimester, and those who are in the third trimester respectively. This could be attributed to that women who are in the first trimester don't suffer from difficulty of movement as compared with women in the second and third trimester. This finding is consistent with that of Nascimento [22] who indicated that in southern Brazil 14.8% of women were active before pregnancy, and 12.9% during pregnancy. The prevalence decreased during pregnancy (10.4%, 8.5%, and 6.5% in the first, second, and third trimester), and only 4.3% of participants were active throughout pregnancy.

Pregnant women who perceived their general health status as "good" have a sounder perception of regular physical exercise during pregnancy than those who perceived their general health status as "fair". This could be attributed to that pregnant women who perceived their general health status as "good" don't have a chronic disease or other health problems. So that, they followed a healthy lifestyle with sounder perception of regular physical exercise during pregnancy. Also, that will increase confidence in their ability to perform physical exercise during pregnancy.

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