Original Article

Quality of Life in Pregnant Women with and without Constipation: A Comparative Study

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Abstract

Aim: Constipation causes various ill-effects on daily life. Several constipation complications during pregnancy do not pose a serious threat to the mother and fetus, but the quality of life of the affected pregnant woman may deteriorate. This study aimed to compare the life qualities of pregnant women with and without constipation. **Methods**: The study comprised pregnant women visiting the Obstetrics and Pediatrics Hospital. Data collection was performed using the data collection form, Rome III criteria, and Quality of Life (SF-36) scales by random sampling method and face-to-face interview with 642 pregnant women; of these, 321 were with constipation and 321 without. The homogeneity of the descriptive characteristics of the study groups was assessed by Pearson chi-square test for categorical variables, t-test for independent variables in the numerical variables and Mann–Whitney's U-test (n < 30). The chi-square analysis was performed in parts and used for further analysis. The t-test was used for the comparison of SF-36 Quality of Life Scale sub-dimension averages, in independent groups.

Results: There was no statistically significant difference between the pregnant women with and without constipation, their levels of education, family income levels, general lifestyles. The difference between the women with and without constipation in terms of sub-dimensions of SF-36, which were physical function (45.40±20.86), physical role strength (21.34±31.32), pain (42.9±18.27), energy/vitality (22.80±13.82), social functioning (51.25±19.77), emotional role strength (l8.17±30.93), mental health (51.29±16.17), and general health perception (44.96±15.45) were highly significant. Moreover, constipation affected the quality of life of the pregnant women in all three trimesters of pregnancy

Conclusion: Thus, the health behaviors aiming to cope with constipation must be provided to pregnant women.

Key words: pregnancy; constipation; quality of life

Introduction

Constipation is not a disease; it is a symptom that varies from person to person, can be interpreted differently, and may have an impact on daily life (Papatheodoridis et al., 2010; Johnson et al., 2014; Body & Christie, 2016). Constipation means having hard and solid stools, less than the normal number of stools, difficulty in defecation, feeling of incomplete excretion, infrequent bowel movements, and use of hand to make defecation easier (Sanchez & Bercik, 2011; Body & Christie, 2016). Constipation can also be described as a type of defecation having less than three bowel movements per week or having hard, large, or lumpy stools, along with a frequent bleeding and anal fissure (Shin et al., 2015; Rungsiprakarn et al., 2015). Female gender, low income, low level of education, insufficient physical activity, consumption of insufficient fiber food, low daily fluid intake, use of drugs, chronic diseases, stress, old age, body mass index over 24, and pregnancy are the conditions which pose a risk for constipation (Oh et al,. 2013; Shi et al., 2015; Shin et al., 2015; Rungsiprakarn et al., 2015). Most of the

complaints of constipation seen during pregnancy do not cause a serious hazard for the mother and fetus; however, the quality of life in pregnant women affected by this situation can be significantly impaired. Recognizing the changes taking place during pregnancy is important to interpret the gastrointestinal complaints, which may influence the quality of life of pregnant women (Body & Christie, 2016). Rectal fullness and pressure sensation in constipation, pain and strain during defecation, feeling of incomplete excretion, having hard and solid stools, abdominal distension, headache, weakness, abdominal pain like cramps, loss of appetite, vomiting, abdominal tension, and regional sensitivity in the body affects the perception and quality of life of pregnant women (Carpenito, 2016; Ferdinande et al., 2018). Although some studies on constipation in pregnant women are available in the world and Turkey (Derbyshire et al., 2006; Ponce et al., 2008; Shi et al., 2011; García Duarte et al., 2015), limited study has been found directly evaluating the quality of life of the pregnant women with constipation (Odabas & Taspinar, 2020). The objectives of heathcare professionals include protecting the current status of the pregnant women, preventing health-deteriorating factors, promoting optimum health, and improving the health.

The purpose of this descriptive research, compare the life qualities of pregnant women with and without constipation. The research questions developed for this purpose are as follows:

- Is there an important correlation between the sociodemographic characteristics and constipation?
- Is there a difference between the constipation status and the defecation characteristics of pregnant women?
- Is there a difference between the nutritional characteristics of pregnant women with and without constipation?
- Is there a difference between the fluid consumption characteristics of pregnant women with and without constipation?
- Are the score rates of the subscales of the quality of life scale in women with constipation and without constipation different?
- Are the score rates of the sub-dimensions of the quality of life scale of pregnant women with and without constipation different according to their pregnancy period?

Materials and Methods

Study participants: A table was used to determine the rates in the society, to determine the sample size for the study (Lemeshow et al. 2000). The ratio of constipation prevalence during the gestation period was derived from the study of Derbyshire et al. (Derbyshire et al., 2006) in this study; the constipation rates were found to be 23% in the first trimester, 21% in the second, and 12% in the third. A 95% confidence level and 7% relative certainty were taken into consideration. The study comprised of 321 pregnant women with constipation and 321 without constipation, thus a total sample of 642 women.

Inclusion criteria: Literate pregnant women in the age range of 18–45 years; with no multiple pregnancies; use of medications; history of cancer, a disease that limits physical mobility; history of neurological or psychiatric disorder, rheumatic diseases, metabolic and endocrine diseases, digestive diseases were included in the study.

Data collection and measures: Data were collected by a face-to-face interview with the pregnant women, admitted to Obstetrics and Pediatrics Hospital between May-October 2017, using random sampling method from probability sampling methods and by using personal data sheets, Rome III criteria, and the Quality of Life (SF-36) scale. In the form of data collection form created by scanning the literature; questions related to sociodemographic features, dietary habits and defecation features were grouped under 3 headings (Ayaz & Hisar, 2014; Rungsiprakarn et al., 2015; Shi et al,. 2015; Ferdinande et al., 2018). According to the Rome III criteria, to consider a person to be suffering from constipation, complaints must have been started at least six months ago. In other conditions; at least two or more of the symptoms such as straining for three months, lumpy or hard stools, incomplete discharge sensation, feeling of anorectal obstruction, and use of hand to make defecation easier, should be seen in at least 25% of the defecations (Longstreth et al., 2006). According to these criteria, the patients were classified as pregnant women with constipation and without constipation. "Short Form-36 Health Survey (SF-36)" was used to assess health-related quality of life. SF-36 was formed by Ware and

Sherbourne (Ware & Sherbourne, 1992), to measure the quality of life, especially in patients with a physical disease, and its validity and reliability studies were done by translating it into Turkish (Kocyigit et al., 1999). Cronbach's alpha coefficient was calculated for each subscale of the scale, in the reliability studies, and it was obtained between 0.68-0.90 SF-36 consists of a total of 36 items and measures eight dimensions. While "0" indicates the worst health status, "100" represents the best health status. Total score is calculated for each subscale separately.

Statistical analyses: Descriptive statistics of the study included the number, percentage, mean, and standard deviation. Kolmogorov–Smirnov test, skewness, and Kurtosis values were used to evaluate the normal distribution of the data. The homogeneity of the descriptive characteristics of the study groups was evaluated by Pearson's chi-square test in categorical variables, t-test and Mann–Whitney U-test in the independent groups for numerical variables. The t-test was used to compare the SF-36 subscale scores in independent groups. The statistical significance level was accepted at $p<0.05$. Chi-square analysis was carried out in the parts, used for further analysis. When a difference was found between the groups in the chi-square analysis of the multi-group variables, the test was repeated by subtracting the group with the highest chi-square from the analysis, as a further analysis.

Ethical considerations: Institutional permissions were received from The University of Necmettin Erbakan Medicines and Medical Devices Research Ethics Committee (Number: 2016/740). The permission to use the scale was received from Kocyigit et al., who studied the validity and reliability of the Turkish version of the SF-36. Participants were written informed about the research and consent was obtained from those who accepted to participate in the study.

Results

The mean age of the study group is 26.73 and mean gestation weeks 19.09. There was no statistically significant difference between the pregnant women with and without constipation, their levels of education, family income levels, general lifestyles, and the distribution of smoking status ($p>0.05$, Table 1). When the distribution of pregnant women with and without constipation according to their daily total meals, the number of daily main meals and snacks, daily consumption of fruits and vegetables, and consumption of weekly pulses was examined, there was a significant difference between the groups with respect to the five nutritional characteristics ($p<0.001$). When the distribution of daily fluid consumption of the pregnant women according to the presence of constipation was examined, the rate of adequate fluid consumption (37.7%) of pregnant women with constipation was significantly lower than that of pregnant women without constipation (90.3%; $p<0.001$). When the type of toilet used by pregnant women was examined according to the condition of constipation, it was found that the rate of using squatting toilet in pregnant women without constipation (85%) was significantly higher than those with constipation (77.9%) ($p<.05$). It was determined that the rate of occurrence of problems such as hemorrhoids and cracks that would make defecation difficult in pregnant women with constipation (53.9%) was significantly higher than those without constipation (19.9%) ($p<0.001$). When eight subscale mean score of the SF-36 was examined in pregnant women according to the presence of constipation, it was in the pregnant women with constipation and in those without constipation the difference between the groups was highly significant ($p<0.001$, Table 2). In the first and second trimesters, the score rates of the eight sub-dimensions of the SF-36 of pregnant women with constipation were significantly lower than those of the pregnant women without constipation ($p<0.001$, Table 3). In the third trimester, the mean scores of the subscales of physical function and general health of pregnant women with constipation were significantly higher than that of pregnant women without constipation ($p<0.001$); role limitations based on physical and emotional problems, pain, and mental health subscale score rates were also significantly higher ($p<0.01$); however, the mean subscale scores of vitality and social function were significantly lower ($p<0.05$, Table 3).

Table 1. Distribution of pregnant women by sociodemographic characteristics

Categorical Variables	Constipation (N: 321) N (%)		Non-Constipation (N: 321) N (%)	Total (N: 642) N (%)
Education				
Literate	7 (2.2)		8 (2.5)	15 (2.3)
Primary	168 (52.3)		172 (53.6)	340 (53.0)
High School	122 (38.0)		103 (32.1)	225 (35.0)
University	24 (7.5)		38 (11.8)	62 (9.7)
Test / p		*χ^2: 4.879*	*p: 0 .181*	
Occupation				
Working	16 (5.0)		29 (9.0)	45 (7.0)
Not working	305 (95.0)		292 (91.0)	597 (93.0)
Test / p		*χ^2: 4.039*	*p: 0 .044*	
Income				
Less than expenditure	42 (13.1)		35 (10.9)	77 (12.0)
Equals to their expenditure	260 (81.0)		264 (82.2)	524 (81.6)
More than expenditure	19 (5.9)		22 (6.9)	41 (6.4)
Test / p		*χ^2: .886*	*p: 0.642*	
General lifestyle				
Active	77 (24.0)		86 (26.8)	163 (25.4)
Calm	244 (76.0)		235 (73.2)	479 (74.6)
Test / p		*χ^2: .666*	*p: 0.414*	
Doing regular exercise/sports				
Yes	19 (5.9)		38 (11.8)	57 (8.9)
No	302 (94.1)		283 (88.2)	585 (91.1)
Test / p		*χ^2: 6.950*	*p: 0.008*	
Perception of exposure to stress				
Never	2 (0.6)		54 (16.8)	56 (8.7)
Sometimes	215 (67.0)		202 (62.9)	417 (65.0)
Often/Consistently	104 (32.4)		65 (20.3)	169 (26.3)

Test / p		*χ^2: 57.691*	*p: <0.001*	
Smoking				
Yes	23 (7.2)		25 (7.8)	48 (7.5)
No	298 (92.8)		296 (92.2)	594 (92.5)
Test / p		*χ^2: .090*	*p: 0 .764*	
Numerical Data	**$\bar{X}$ ±SD**		**$\bar{X}$ ±SD**	**$\bar{X}$ ±SD**
The duration of smoking (n: 23/25, year)	7.22 ± 5.07		10.04 ± 6.47	8.69 ± 5.95
Test / p		*U: 225.5*	*p: 0.177*	
The number of cigarettes (n: 23/25, number/daily)	5.26 ± 2.68		4.36 ± 2.61	4.79 ± 2.66
Test / p		*U: 214.0*	*p: 0.124*	

χ^2: Pearson Chi-square analysis U: Mann Whitney U test, $\bar{X}$: Average, SS: Standard Deviation
p: Significant diffirence <.05

Table 2. The comparison of life quality in pregnant women with and without constipation

SF36 Quality of Life Sub-scales	Constipation (N: 321) $\bar{X}$ ±SS	Non-Constipation (N: 321) $\bar{X}$ ±SS	t	p*
1. Physical function	45.40±20.86	72.06±19.84	16.59	<0.001
2. Role limitations based on physical problems	21.34±31.32	57.94±37.33	13.46	<0.001
3. Pain	42.94±18.27	61.23±22.08	11.43	<0.001
4. Vitality	22.80±13.82	42.40±23.06	13.06	<0.001
5. Social function	51.25±19.77	72.86±21.94	13.11	<0.001
6. Role limitations based on emotional problems	18.17±30.93	54.10±40.03	12.73	<0.001
7. Mental health	51.29±16.17	70.68±18.29	14.23	<0.001
8. General Perception of Health	44.96±15.45	67.10±15.91	17.89	<0.001

$\bar{X}$: Average, SD: Standard Deviation, t test in independent groups. The degrees of freedom: 640
*p: Significant diffirence <.001

Table 3. The comparison of life quality levels of pregnants with and without constipation according to pregnancy periods

Trimester	Constipation	SF-36 Quality of Life Sub-scales							
		1. Physical function	2. Role limitations based on physical problems	3. Pain	4. Vitality	5. Social function	6. Role limitations based on emotional problems	7. Mental health	8. General perception of health
		$\bar{x} \pm SD$	$\bar{x} \pm SD$	$\bar{x} \pm SD$	$\bar{x} \pm SD$	$\bar{x} \pm SD$	$\bar{x} \pm SD$	$\bar{x} \pm SD$	$\bar{x} \pm SD$
1. Trimester	Yes (S: 126)	54.21±20.05	22.82±37.02	48.99±17.76	25.63±13.39	52.88±16.44	20.63±37.20	50.22±12.32	42.52±16.86
	No (S: 125)	82.04±15.63	66.80±35.18	71.44±17.77	51.48±21.01	76.80±20.44	63.20±39.22	74.72±13.92	70.65±16.39
	t	*12.269*	*9.647*	*10.011*	*11.611*	*10.213*	*8.820*	*14.770*	*13.401*
	*p**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
2. Trimester	Yes (S: 123)	41.54±17.51	16.46±22.60	41.35±15.68	21.99±12.54	45.93±15.14	11.92±19.15	46.96±12.63	45.73±14.63
	No (S: 124)	72.06±17.26	57.46±37.85	58.91±17.23	42.30±21.29	71.88±21.60	52.15±39.47	66.39±19.83	68.63±14.94
	t	*13.791*	*10.345*	*8.375*	*9.141*	*10.936*	*10.202*	*9.191*	*12.167*
	*p**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
3. Trimester	Yes (S: 72)	36.60±22.01	27.08±32.43	35.08±19.88	19.24±15.71	57.47±28.28	24.54±33.56	60.56±22.72	47.93±13.66
	No (S: 72)	54.72±18.74	43.40±35.85	47.50±27.35	26.81±21.19	67.71±23.99	41.67±39.06	71.06±20.65	58.32±13.44
	t	*5.320*	*2.864*	*3.116*	*2.435*	*2.344*	*2.822*	*2.902*	*4.601*
	*p**	<0.001	*0.005*	*0.002*	*0.016*	*0.020*	*0.005*	*0.004*	<0.001

$\bar{x}$: Average, SD: Standard Deviation, t: t test in independent groups (1.trimester sd: 249. 2. trimester sd: 245. 3.trimester sd: 142, *p: Significant diffirence <.001

Discussion

Constipation, which is one of the gastrointestinal complaints, can cause various risks for pregnant women and may cause pregnant women to visit the health institutions (Johnson et al., 2014; Rungsiprakarn et al., 2015). In a study found that three-quarters of the pregnant women experienced functional intestinal disorders in the first trimester (Johnson et al., 2014). Although the overall quality of life was at a higher side, the quality of life was negatively affected by the body image in terms of constipation and swelling. In the present study, the presence of constipation caused pain and negatively affected the quality of life. Therefore, it is evident that the early detection of constipation and management of constipation symptoms, such as pain, can improve the quality of life in pregnant women. It was determined that 38.8% of Odabas and Taspinar pregnant women had constption problems and the mean quality of life scores of pregnants who had constipation were lower. However, only in the psychological field this lowness is statistically significant ($p = 0.016$) (Odabas & Taspinar, 2020). In another study, hemorrhoidal complications and anal fissure during pregnancy and postpartum were seen in two-thirds of individuals. The most important risk factor of this is constipation (Ferdinande et al., 2018). Dalfra` et al. showed that pregnancy is associated with a perception of poor general health in women (Dalfra` et al., 2012). In a study by Förger et al., the perception of general health decreased as the pregnancy period increased because the presence of constipation leads to malaise, abdominal distension, sensation of tension in the abdomen, and sensation of rectal fullness, which may adversely affect the general perception of health of individuals (Förger et al., 2005). It is likely that the physical environment and living conditions affect the quality of life in the area of physical, psychological, and mental health. Therefore, a high quality of life in the environment may also make contribution to the quality of life of the pregnant women in terms of physical, psychological, and mental health. In addition, in these periods, the fetus may create pressure on the intestines or the pregnant person may be affected by hormonal changes, and thus the quality of life of the individual may be impaired (Shin et al., 2015; Gharehbaghi et al., 2016; Body & Christie, 2016; Ferdinande et al., 2018)

The progression of the pregnancy, the fetus becomes the largest in the mother's womb, and the third trimester is a period in which the weight gain is peaked during pregnancy. In addition to the concerns about the birth process and the newborn, it is likely that third-trimester pregnant women may be affected by the limitation of movement and complaints in terms of mental health and may deteriorate the quality of life in terms of psychological health. In this context, the symptoms that may be seen can be minimized by increasing the antenatal care services (Sebayang et al., 2019; Blackstone, 2019).

The main strengths of this study were the relatively large sample size, homogeneity of the pregnant women. However, the limitations of this study can be generalized only by the sampling.

Conclusion: According to the results of the research, pregnant women with constipation were found to have lower mean quality of life subscales scores in terms of physical function, role limitations based on physical problems, pain, vitality, social function, emotional problems, mental health, and general perception of health than those without constipation. Additionally, it has been concluded that constipation negatively affects the quality of life in every period of pregnancy. Healthcare professionals should definitely evaluate pregnant women in terms of constipation. Considering the result of lower quality of life of individuals with constipation, it is suggested to provide education to improve the quality of life by examining the eight sub-dimensions of the quality of life. Since constipation affects the quality of life in every period of pregnancy, it is suggested to provide health behaviors to cope with constipation.

Acknowledgements: We thank, which conducted, and all participants in the present study for their generous cooperation.

Financial Disclosure: This work was supported by the [Necmettin Erbakan University Scientific Research Projects Coordinator] under Grant [number 171330001]

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