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Research Article

FEAR OF PREGNANCY AND BIRTH

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Abstract: *This study aimed to examine the relationship between internet use and fear of childbirth in pregnant women. This descriptive cross-sectional study was conducted with a total of 385 pregnant women who were referred to a hospital in Turkey. Data were collected using a personal information form and the Women Childbirth Fear – Prior to Pregnancy Scale (WCF-PPS). The WCF-PPS total mean score of the pregnant women was 38.04±10.49 (17-60) and there was a weakly significant positive correlation between their WCF-PPS total score and duration of daily internet use. In addition, there was a statistically significant relationship between their WCF-PPS total mean score, the issues searched on the Internet about pregnancy/childbirth, the status of believing in the accuracy of the information they obtained on the Internet, the status of confirming this information by health professionals, and the status of having concerns about this information (p<0.05). It is recommended that health professionals be aware of the information needs of pregnant women and take appropriate initiatives in this regard.*

Keywords*: Childbirth, fear, internet, pregnancy.*

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1. Introduction

Childbirth is a painful process with outputs that cannot be predicted with certainty. Considering the uncertainty of this process, it is normal for women to have some fear of childbirth (FOC) [1, 2]. Fear of childbirth among pregnant women was first examined [3, 4]. The factors of fear of childbirth in pregnant women include previous negative birth experiences [5], misinformation, low trust in existing healthcare organizations and providers [6], inadequate preparation (both physically and mentally) for pregnancy and delivery [7], fear of death, fear of losing control during active labor, and fear of prolonged labor pains [8]. Women search for different information about the childbirth fears they experience during pregnancy.

Today, with the rapid development in information and communication technologies, the widespread use of the Internet has made social networks, which are expressed as social media, a part of our lives and caused them to be used as a source of health information [9]. More than 57% of the world's population is active internet users. This rate varies between 60-98% in European countries, while it is 83.3% in Turkey [10]. During pregnancy, most women actively use their mobile phones [11]. Individuals search for health information on the Internet before getting information from health professionals and doctors [2]. Several studies have shown that pregnant women seek to obtain information about childbirth, fetus, labor pain, fear of childbirth, and pregnancy over the Internet [2, 12]. Polluted information obtained from the Internet during pregnancy can cause unnecessary worry, anxiety, stress, and fear of childbirth in pregnant women.

Today, one of the risky aspects of internet and media use is that the researched information is accepted as accurate and reliable without confirming it by a health professional/midwife [13]. This situation causes women to be unable to find a solution to their pregnancy and birth needs [14]. Women need to obtain information from accurate and reliable sources that have been adequately confirmed by midwives, to have healthy pregnancy and labor.

Considering the widespread use of social media and the Internet today, women-oriented interventions can be developed for fear of childbirth in pregnant women. Midwives should be aware of how internet use affects pregnant women in every follow-up and counseling, provide training, and direct them to the right sources to obtain relevant information. Although there are studies on the fear of childbirth in Turkey, they did not examine the relationship between internet use and the fear of childbirth in detail. Therefore, this study aimed to examine the relationship between internet use and fear of childbirth in pregnant women.

2. Materials and Methods

2.1. Research Design and Participants

The population of this cross-sectional descriptive study consisted of healthy pregnant women between January 24 and September 09, 2022, in a province in the east of Turkey. The sample size was determined as 282 pregnant women with a 5% error level, bidirectional significance level, 95% confidence interval, and 0.89 power of representation. Pregnant women were selected by random sampling method, which is one of the non-probability sampling methods. Healthy pregnant women over the age of 18 years who were able to communicate and agreed to participate in the study were recruited. Those who had any health issues were excluded from the study.

2.2. Measures

The data were collected using a personal information form and the WCF-PPS through face-to-face interviews. Information about the study was presented on the first page of the online survey form and the participants filled in the survey form only once.

2.2.1 Personal Information Form

The form was developed by the researchers in line with the literature and included a total of 25 questions about the pregnant women's socio-demographic characteristics, pregnancy, number of living children and miscarriages, duration of pregnancy, whether having a planned pregnancy, planned delivery type, negative experiences in previous childbirths, status of attending a pregnant school, status of having social support, and internet use.

2.2.2 Women Childbirth Fear – Prior to Pregnancy Scale (WCF-PPS)

The scale was developed by Stoll et al. (2016) and is a self-reported scale to measure the pre-pregnancy fear of childbirth in young women and men [15]. The Turkish validity and reliability study of the scale was performed by Uçar and Taşhan in 2018 [16]. The minimum and maximum scale scores are 10 and 60, respectively. A higher item-total score indicates a greater level of fear of childbirth. The Cronbach's alpha coefficient of the scale was 0.86 [15]. In our study, the Cronbach's alpha coefficient of the scale was calculated as 0.90.

2.3. Data Collection

Data were collected by the researcher. Pregnant women were informed about the study and their consent was obtained. Personal information form and Women's Pre-Pregnancy Fear of Birth Scale (WCF-PPS) were used as data collection tools.

2.4. Statistical Analysis

The data was analyzed using the SPSS for Windows 15.0 (Statistical Package for Social Science for Windows) package program. The Kolmogorov-Smirnov test was used to check whether the data had a normal distribution. The data were evaluated using descriptive statistics including numbers, the Kruskal Wallis test, the Mann-Whitney U test, and Pearson's correlation analysis.

Ethical considerations

For conducting the study, Ethics committee approval for this research was received from the Non-Interventional Clinical Research Ethics Committee of a university on 24/01/2022 with decision number 2022/202. In addition, the participants were informed about the study and explained that their personal information would be kept confidential.

3. Results

Table 1 shows the pregnant women's socio-demographic characteristics and WCF-PPS total score distribution. There was a statistically significant relationship between the pregnant women's WCF-PPS total mean scores, employment status, duration of education, and duration of spouse's education ($p<0.05$). There was no statistically significant relationship between their WCF-PPS total mean scores, age, spouse's employment status, monthly income, family type, and place of residence ($p>0.05$).

Table 1. The Relationship Between Pregnant Women's Socio-Demographic Characteristics and WCF-PPS Total Scores (N: 282)

Socio-Demographic Characteristics	Number (%)	$\bar{X}$ ±SD	WCF-PPS Total Score	Statistical test
Age		30.36±13.24	38.04±10.49	r=-0.016* p=0.792
Employment Status				
Yes	89(31.6)		41.82±11.21	Z=-4.237
No	193(68.4)		35.89±9.44	p=0.000**
Husband's Employment Status				
Yes	261(92.6)		37.78±10.65	Z=-0.032
No	21(7.4)		37.52±6.44	p=0.974
Duration of Education (year)				
≤ 4	53(18.8)		37.66±10.23[a]	KW=10.74 [α]
5-8	49(17.4)		36.73±8.81[a]	p=0.004*
≥ 9	180(63.8)		39.33±10.79[b]	
Duration of Husband's Education (year)				
≤ 4	52(18.4)		40.63±8.24	KW=21.416
5-8	116(41.1)		34.57±10.44	p=0.000**
≥ 9	114(40.4)		40.31±10.51	
Monthly income				
High	65(23.0)		37.68±10.28	KW=1.498
Moderate	196(69.5)		38.40±10.61	p=0.473
Low	21(7.4)		35.85±10.26	
Type of family				
Nuclear family	242(85.8)		37.77±10.27	Z=-0.672
Extended family	40(14.2)		39.80±11.89	p=0.502
Place of residence				
City	239(84.8)		38.11±10.74	Z=-0.048
County/Village	43(15.2)		37.50±8.71	p=0.962

r: Pearson correlation analysis, α: KW: Kruskal Wallis Test; Z: Mann Whitney U Test ;*:p<0.05; **:p<0.01

Table 2 shows the pregnant women's obstetric characteristics and WCF-PPS total score distribution. There was a statistically significant relationship between the pregnant women's WCF-PPS total mean scores, number of pregnancies, number of living children, duration of pregnancy, type of planned delivery, type of desired delivery, presence of negative experiences in previous childbirths, and presence of social support ($p<0.05$). There was no statistically significant relationship between their WCF-PPS total mean scores, number of miscarriages, status of having planned pregnancy, and status of attending a pregnant school ($p>0.05$).

Table 2. The Relationship Between Pregnant Women's Obstetric Characteristics and WCF-PPS Total Scores (N: 282)

Obstetric Characteristics	Number (%)	WCF-PPS Total Score	Statistical test
Number of Pregnancy			
Primiparous ≤1	103(36.5)	40.32±8.74	Z=-3.343
Multiparous ≥2	179(63.5)	36.72±11.19	p=0.001**
Number of Living Children			
≤1	178(63.1)	39.19±9.74	Z=-2.735
≥2	104(36.9)	35.96±11.48	p=0.006**
Gestational time (months)			
0-3	90(31.9)	35.31±10.24	KW=10.201 α
4-6	85(30.1)	36.90±10.11	p=0.001**
7-9	107(37.9)	42.88±10.96	
Number of Miscarriage			
≤1	247(87.6)	38.02±10.41	Z=-1.477
≥2	35(12.4)	32.00±12.86	p=0.140
Had a Planned Pregnancy			
Yes	220(77.5)	38.33±10.43	Z=-1.006
No	62(22.5)	36.73±10.72	p=0.315
Planned Type of Delivery			
Normal delivery	147(52.42)	38.72±10.02[a]	KW=-6.556
Cesarean section	70(24.4)	44.58±12.01[b]	p=0.000**
None	65(23.18)	39.34±13.44[a]	
Desired Type of Delivery			
Normal delivery	212(75.6)	36.72±9.82	Z=-2.413
Cesarean section	70(24.4)	41.60±12.07	p=0.016
Negative Experiences at Previous Childbirth			
Yes	232(82.3)	37.07±10.15	Z=-2.915
No	50(17.7)	41.97±10.83	p=0.003**
Attended Pregnant School			
Yes	50(17.0)	37.27±8.30	Z=-0.012
No	232(73.0)	38.23±10.91	p=0.990
Social Support			
Yes	260(92.2)	37.66±10.48	Z=-2.588
No	22(7.8)	45.33±7.83	p=0.010*

α: KW: Kruskal Wallis Test; Z: Mann Whitney U Test ;*:p<0.05; **:p<0.01

Table 3 shows the relationship between the pregnant women's characteristics of internet use and WCF-PPS total score distribution. The women spent an average of 1.80±1.55 hours a day on the Internet, and an average of 1.32±1.26 hours a day to research topics related to pregnancy/childbirth. In addition, 34.4% of them used spending time, 50.4% researched the methods of coping with labor pains, 71.3% believed that the information they obtained from the Internet was correct, and 41.8% did not confirm the information they obtained from the Internet by health professionals.

In addition, there was a weak positive relationship between the pregnant women's WCF-PPS total mean scores and the times they spent on the Internet and searching for pregnancy/childbirth-related issues. In

addition, there was a statistically significant relationship between their WCF-PPS total mean scores, the subjects they searched about pregnancy/childbirth, status of believing in the accuracy of the information they obtained on the Internet, status of confirming this information by health professionals, and status of having concerns due to the information they obtained from the Internet ($p<0.05$). There was no statistically significant relationship between their WCF-PPS total mean score and internet usage purposes ($p>0.05$).

Table 3. The Relationship Between Pregnant Women's Internet Usage Characteristics and WCF-PPS Total Scores (N: 282)

Internet Usage Characteristics	**Number (%)**	**$\bar{X}$ ±SD**	**WCF-PPS Total Score**	**Statistical test**
Time spent on the Internet (per day)		1.80±1.55	38.04±10.49	r= 0.352 p=0.000**
Time spent on the Internet researching pregnancy/childbirth-related topics		1.32±1.26	38.04±10.49	r= 0.235 p=0.014*
Internet usage purpose				
Playing games - shopping - meeting new people	52(18.4)		40.56±13.51	KW=5.567$^{\alpha}$
Getting information	48(17.0)		36.44±8.05	p=0.206
Spending time	97(34.4)		38.63±9.57	
Using Social media	85(30.2)		36.80±10.64	
Issues searched for pregnancy/childbirth (multiple options marked)				
Formation of pregnancy	58(20.4)		35.31±10.22	KW=21.556
Complications during pregnancy	49(18.0)		36.90±10.13	p=0.000**
Nutrition during pregnancy	97(35.7)		38.88±10.98	
Infant development	85(33.2)		36.33±10.24	
Type of delivery	98(18.4)		43.86±10.11	
Problems during childbirth	120(48.4)		44.78±10.96	
Methods of coping with labor pain	128(50.4)		43.83±11.35	
Belief in the accuracy of Internet information				
Yes	201(71.3)		39.38±10.11	Z=-3.029
No	81(28.7)		34.72±10.56	p=0.002*
Status of confirming information obtained from the Internet by health professionals				
Yes	164(58.2)		39.59±10.25	Z=-2.974
No	118(41.8)		36.01±10.34	p=0.003**
Status having concerns due to information obtained from the Internet				
Yes	118(39.0)		42.26±9.99	Z=-5.282
No	164(58.2)		35.34±9.77	p=0.000**

r: Pearson correlation analysis; α: KW: Kruskal Wallis Test; Z: Mann Whitney U Test ;*:p<0.05; **:p<0.01

4. Discussion

Pregnancy is a complex process in which women experience many emotions together, including fear of childbirth. Due to fear of childbirth, women are considered to have complications regarding both their health and their baby's health during pregnancy/childbirth. In our study, the pregnant women had a moderate level of fear of childbirth. Like our study, several studies in the literature have reported that pregnant women have moderate or high levels of fear of childbirth [17, 18].

Several factors affect the fear of childbirth. This study examined the relationship between internet use during pregnancy and fear of childbirth. In our study, the pregnant women's WCF-PPS total scores increased as the average time they spent on the Internet and searching for pregnancy/childbirth-related issues increased. Pregnant women mostly searched online about the possible problems in childbirth and methods of coping with labor pains. Cirban and Özsoy (2020) found that women surfed on the Internet for many subjects related to pregnancy, childbirth, and the postpartum period. A study reported that the majority of women searched on the Internet about labor pains and fear of childbirth [19]. Kocademir and Öter (2022) found that women used the Internet to have information about pregnancy because they

had easy and fast access to information, and mostly searched on fear of childbirth and labor issues [20]. In the literature, there is no study about the relationship between internet use and fear of childbirth. However, diverse studies on the subject have reported that women use the Internet to search for topics related to pregnancy/childbirth and benefit from the Internet by getting information about how to cope with the fear of childbirth.

Our study determined that pregnant women spent more than an hour on the Internet daily and used the Internet to obtain information about pregnancy/childbirth for more than one hour a day. Jacobs Steijn and Pampus (2019) reported that 95.6% of women with a plan for having pregnancy and pregnant women used the Internet as a source of information, and most women spent less than two hours a day on the Internet [21]. Cirban and Özsoy (2020) have determined that the Internet is frequently used during pregnancy in Turkey and across the world [19]. Kocademir and Oter (2022) found that 47.6% of pregnant women spent two hours or more on the Internet a day, 78.9% used the Internet every day, and 65.0% used the Internet during pregnancy more than before pregnancy [20]. Our study suggests that women frequently use the Internet, which is compatible with the literature.

In our study, most pregnant women believed in the accuracy of the information they obtained from the Internet, which has increased their fear of childbirth. Masella and Godard (2020) stated that pregnant women may have misinformation and disproportionate information while using the Internet [22]. Kocademir and Oter (2022) determined that 54.6% of pregnant women reported trusting the information they obtained from the Internet, and 38.2% compared such information with other sources to confirm its reliability [20]. In addition, our study determined that 64.5% of the pregnant women did not verify the information they received from the Internet by health professionals, and 94.8% were not directed to reliable internet resources by health professionals. In line with our results and those in the literature, it is worrying that pregnant women believe in the accuracy of the information they obtain from the Internet and do not confirm this information by health professionals.

5. Conclusions and Recommendations

- In our study, the pregnant women had moderate levels of fear of childbirth; therefore, it is recommended that health professionals train pregnant women on how to cope with their fear of childbirth.
- There was a weak positive relationship between pregnant women's daily internet usage time and fear of childbirth; therefore, it is recommended that health professionals be careful about the fact that the Internet can increase the fear of childbirth in women.
- The pregnant women reported spending more than one hour on the Internet daily and searching for common problems related to pregnancy/childbirth and methods of coping with labor pain; therefore, it is recommended that health professionals determine the lack of knowledge of pregnant women in this regard and take appropriate initiatives for them.
- The majority of pregnant women believed in the accuracy of the information they obtained from the Internet; therefore, it is recommended that healthcare professionals support pregnant women to improve the health of both them and their babies.

Limitations of the study:

The major limitation of our study is that it is a single center. The results obtained may not be generalized to other parts of the country.

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Conflict of interest:

No potential conflict of interest was reported by the author(s).

Authors' Contributions:

Conceptualization: SBK, İT; İdea concept: SBK; Literature review: İT; Data collection: İT, SBK; Data analysis, findings: SBK; Writing up the original draft: İT; Critical review: SBK

Note: This study has been presented in 9. International GAP Summit Scientific Research Projects Congress, held in Gaziantep, 1-3 July 2022.

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