The Frequency of Pregnancy Complaints and the Effective Socio-demographic Factors Among Pregnant Women Referring to Neyshabur Health Centers in 2021

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Abstract

Background: Pregnancy is one of the most sensitive stages of a woman's life, and changes at this time can have physical and psychological complications for women.

Objectives: This study aimed to assess the frequency of pregnancy complaints (PC) and the effective socio-demographic factors among pregnant women referred to Neyshabur health centers.

Methods: This cross-sectional study was performed on 417 pregnant women referred to Neyshabur health centers in 2021. Data collection was carried out using demographic characteristics and PC questionnaires. Descriptive statistics (mean, standard deviation), analytical statistics (multiple linear regression). The software used for data analysis was SPSS software version 22. The significance level was considered at 0.05.

Results: The mean age of pregnant women was 28.36 ± 5.96. The mean PC score was 37.76 ± 8.85. Fatigue (73.38%) and hemorrhoids (4.8%) were the most common and least common PC. Multiple linear regression results showed that maternal age (P < 0.05) and sleep quality (P < 0.001) were statistically significant variables related to PC. On this basis, as maternal age increases, the mean score for PC increases by 0.94. In addition, the average score of pregnancy-related complaints for those with a good sleep quality was 6.32 lower than for those with a bad sleep quality.

Conclusions: Maternal age and bad sleep quality factors increase the possibility of a pregnancy-related complaint. So, it is recommended that healthcare providers develop and implement educational interventions to improve sleep quality and pregnancy awareness at older ages.

Keywords: Pregnancy, Pregnancy Complications, Women

1. Background

Pregnancy is one of the riskiest and most difficult stages in a woman's life; in fact, there are stages in every woman's life that profoundly affect her life (1). These effects during pregnancy have been named pregnancy complaints (PC), such as nausea and vomiting, fatigue, back and groin pain, leg varicose veins, edema, increased vaginal discharge, constipation, hemorrhoids, dizziness, and weakness, increased saliva and stomach burning (2, 3). In a study conducted in 2017, average common complaints from pregnant women showed that around 67% of pregnant women have common pregnancy problems (2).

The significant effects of a risky pregnancy on the child's growth and physical and mental health have been demonstrated (4). Pregnancy complaints during pregnancy has a significant impact on the physical and mental health of the mother and the way she communicates with her child after childbirth (5). The interaction of PC has a significant impact on the quality of life of pregnant women and affects both maternal and child health (pregnancy monitoring, pregnancy outcomes, maternal postpartum health, and the psychomotor development of the infant) (6, 7). In addition, the impact of complaints during pregnancy on conjugal relationships can lead to the deepening of the couple's relationships or their separation (8). Pregnancy care, currently one of the most important indicators of prevention, includes examination and consulta-

tion on significant pregnancy issues, training and support for pregnant women and their families, and the preparation of a continuing clinical and laboratory screening program to confirm the low risk of pregnancy (9).

In Iran, the government supports prenatal care in primary health care centers, which is almost free and low cost (10). In addition, the assessment of women's mental and physical health information, especially the amount and factors associated with complaints during pregnancy caused by the adverse consequences of pregnancy, can be a step towards achieving the slogan (may the mother be healthy and the child be healthy) (6).

Pregnancy complaints causes include maternal stress and anxiety, maternal age, unwanted pregnancy, abortion history, spousal support, hormonal changes, hypertension, and reduced bowel movements due to the effect of targeted hormones, particularly progesterone. The most common complaint regarding unusual fatigue and the least amount of edema was also a relatively common problem in pregnant women between 20 and 24 weeks (11-14).

Given that pregnancy is one of the most important stages in a woman's life and plays a significant role in her health and her child (1), examining the health aspects of pregnant women with an emphasis on identifying complaints during pregnancy and the reasons for these complaints seems necessary.

2. Objectives

This study aimed to evaluate the frequency of PC and the effective socio-demographic factors in pregnant women referred to Neyshabur health centers. The results of this study can be used to identify the amount of PC and related factors and then design appropriate interventions to reduce these complaints, thereby improving the quality of life of pregnant women and the health of their children.

3. Methods

This cross-sectional study was performed on 417 pregnant women who were referred to Neyshabur health centers in 2021 to receive prenatal care.

3.1. Participants

Pregnant women referred to health centers in Neyshabur had inclusion criteria, including a health file, confirmed pregnancy, literacy, and not having a high-risk pregnancy. As well, the exclusion criteria from this study included written dissatisfaction with participation.

3.2. Tools

The data collection tool included two components: (1) demographic characteristics (maternal age, gestational age, number of pregnancies, sex of fetus, education level, husband's level of education, employment status, wealth index, history of abortion, unwanted pregnancy, and sleep quality); (2) PC questionnaire. In order to calculate the wealth index as a composite measure of a pregnant woman's cumulative standard of living, easy-to-collect data on asset ownership by pregnant women and an analysis of key components were used. The PC questionnaire consists of 20 questions about common problems, including painful breasts, frequent urination, fatigue, nausea, vomiting, increased salivation, increased genital secretions, stomach discomfort, pica, mood swings, drowsiness, body skin thickening, backache, flatulence, constipation, hemorrhoids, sleep disorders, edema of the lower limbs, varicose veins of the lower limbs and skin itching. The questionnaire was based on the four-point Likert scale ranging from not at all to severe, and between 1 and 4 was scored. The overall score on the questionnaire is between 20 and 80. The validity of the questionnaire in the study of Karimi et al. using content and formal validity and qualitative method by ten experts related to the research subject was reviewed. The reliability of the questionnaire was also confirmed by Cronbach's alpha method ($\alpha = 0.84$) (1).

3.3. Procedure

After the researchers were in the health centers, data was collected from pregnant women who were referred to the health centers for prenatal care and considered the criteria for entering and leaving the study.

3.4. Ethical Consideration

After the proposal has been approved by the student research committee and the code of ethics has been obtained by the ethics committee of the Neyshabur University of Medical Sciences, permits to gather information have been issued to health centers by the Department of Health. After explaining the objectives of the study, the focus was on maintaining the confidentiality of the information received and obtaining informed written consent for the collection of information through the self-reported method.

3.5. Statistical Analysis

Once the data was gathered, the information was cleaned. Descriptive statistics (mean, standard deviation, absolute and relative frequency distribution table) and multiple linear regression were used to analyze the data. The software used for the data analysis was SPSS software version 22, and the significance level was considered 0.05.

4. Results

Table 1 shows the characteristics of the overall sample. The mean age of pregnant women was 28.36 ± 5.96 years old. Also, the median pregnant women's age was 28.00, with an interquartile range of 10 years. Most gestational age of pregnant women (44.60%) was more than 27 weeks. The education level of pregnant women (43.65%) was Diploma. Also, half of the participants (50.84%) had bad sleep quality.

The frequency distribution of PC is highlighted in Table 2. The mean PC score was 37.76 ± 8. After summing up the minor, severe, and moderate values and percentages of each PC, the most common PC are fatigue (73.38%) and frequent urination (72.42%).

Covariates included all variables with a P < 0.25 in the univariate analysis and maternal age, education level, unwanted pregnancy, and sleep quality. The results indicate that, after adjusting for confounding variables, maternal age (P < 0.05) and sleep quality (P < 0.001) had a significant relationship with PC. On this basis, as maternal age increases, the mean score for PC increases by 0.94. In addition, the average score of pregnancy-related complaints for those with a good quality of sleep was 6.32 lower than for those with a bad quality of sleep (Table 3).

5. Discussion

This study aimed to assess the frequency of PC and the effective socio-demographic factors in pregnant women referred to Neyshabur health centers. This study showed that the mean PC score was 37.76.

In a study by Karimi et al. (1), the results showed that the mean of PC was 38, which aligned with the present study's result. It seems that the use of the same tool to measure the frequency of complaints during pregnancy and the way to access the samples under study is one of the reasons for the alignment of the results of these two studies. The present study showed that most pregnant women (73.38%) suffered from fatigue and frequent urination (72.42%). This was in agreement with findings reported by Karimi et al.'s in 2017 and Masoudi et al. in 2018 studies (1, 14).

Thus, our findings can be considered evidence that fatigue should be considered a universal problem when designing pregnancy care, and health policymakers should be serious about it. Inconsistent with the results of the present study, findings reported by Shafti and Zakeri Hamidi in 2017 (15), Azevedo et al. in 2015 (16), and Kebede et al. in 2021 (17), half of the pregnant women suffered from nausea, vomiting, hypertensive disorders, headache, and high fever, respectively.

Table 1. Demographic Characteristics of Pregnant Women, n = 417

Variables and Category	No. (%)
Maternal age (y)	
< 18	7 (1.68)
18 - 25	140 (33.57)
26 - 35	211 (50.60)
> 35	59 (14.15)
Gestational age (week)	
< 9	38 (9.11)
9 - 18	81 (19.42)
18 - 27	112 (26.86)
> 27	186 (44.60)
Number of pregnancies	
< 3	(63.07) 263
3 - 5	(35.25) 147
> 5	(1.68) 7
Sex of fetus	
Male	169 (53.31)
Female	148 (46.69)
Abortion	
Yes	124 (29.74)
No	293 (70.26)
Education level	
> Diploma	132 (31.65)
Diploma	182 (43.65)
≥ Bachelor's degree	103 (24.70)
Husband's education level	
> Diploma	128 (30.69)
Diploma	195 (46.76)
≥ Bachelor's degree	94 (22.54)
Employment status	
Employed	36 (8.63)
Housewife	381 (91.37)
Unwanted pregnancy	
Yes	102 (24.46)
No	315 (75.54)
Wealth index	
Poorest	83 (19.90)
Poor	84 (20.14)
Mediate	83 (19.90)
Rich	84 (20.14)
Richest	83 (19.90)
Sleep quality	
Good	205 (49.16)
Bad	212 (50.84)

In light of the inconsistency between the present study and the above studies, it is reasonable to assume that complaints will vary at different stages of pregnancy, also depending on when the researcher collects data.

The other result of the present study was the relationship between PC and maternal age. This was in agreement

Table 2. Frequency Distribution of PC, n = 417

Number	PC	Categorize			
		Not at All	Minor	Mediate	Severe
1	Painful breasts	146 (35.01)	128 (30.70)	108 (25.90)	35 (8.39)
2	Frequent urination	115 (27.58)	71 (17.03)	148 (35.49)	83 (19.90)
3	Fatigue	111 (26.62)	125 (29.98)	136 (32.61)	45 (10.79)
4	Nausea	118 (28.30)	86 (20.62)	92 (22.06)	121 (29.02)
5	Vomit	213 (51.08)	73 (17.51)	59 (14.15)	72 (17.26)
6	Increased salivation	267 (64.03)	56 (13.43)	53 (12.71)	41 (9.83)
7	Increased genital secretions	126 (30.22)	107 (25.66)	135 (32.37)	49 (11.75)
8	Stomach discomfort	184 (44.12)	83 (19.90)	75 (17.99)	75 (17.99)
9	Pica	154 (36.93)	91 (21.82)	106 (25.42)	66 (15.83)
10	Mood swings	179 (42.93)	87 (20.86)	104 (24.94)	47 (11.27)
11	Drowsiness	186 (44.60)	102 (24.46)	85 (20.38)	44 (10.55)
12	Body skin thickening	254 (60.91)	68 (16.31)	73 (17.51)	22 (5.27)
13	Backache	143 (34.29)	110 (26.38)	101 (24.22)	63 (15.11)
14	Flatulence	235 (56.35)	70 (16.79)	63 (15.11)	49 (11.75)
15	Constipation	252 (60.43)	66 (15.83)	54 (12.95)	45 (10.79)
16	Hemorrhoids	397 (95.20)	12 (2.88)	6 (1.44)	2 (0.48)
17	Sleep disorders	279 (66.91)	57 (13.67)	48 (11.51)	33 (7.91)
18	Edema of the lower limbs	325 (77.94)	47 (11.27)	34 (8.15)	11 (2.64)
19	Varicose veins of the lower limbs	381 (91.37)	25 (5.99)	9 (2.16)	2 (0.48)
20	Skin itching	263 (63.07)	78 (18.71)	59 (14.15)	17 (4.08)

Table 3. Multiple Linear Regression (PC Indicators) [a, b]

Variables	Univariate B (95% CI)	Full Model B (95% CI)
Maternal age	1.28 (0.43, 2.12) **	0.94 (0.15, 1.73) *
Number of pregnancy	-0.02 (-1.66, 1.62)	
Abortion history	0.84 (-1.02, 2.71)	
Education level	0.67 (-0.47, 1.81)	0.79 (-0.27, 1.84)
Husband education level	0.67 (-0.51, 1.84)	
Job	-1.13 (-4.17, 1.90)	
Unwilling pregnancy	2.02 (0.05, 4.00) *	1.56 (-0.28, 3.40)
Wealth index	-0.10 (-0.71, 0.50)	
Sex	0.72 (-1.25, 2.69)	
Sleep quality	-6.54 (-8.13, -4.96) ***	-6.32 (-7.90, -4.74) ***

Abbreviation: CI, confidence interval.
[a] Full model: Multiple linear regression was conducted after adjusting variables which were P < 0.25 in the univariate regression (adjusting for maternal age, education level, unwilling pregnancy, and sleep quality).
[b] Significance level: *** P < 0.001, ** P < 0.01, * P < 0.05.

with findings reported by Tanaka et al. in 2022 (18), Londero et al. in 2019 (19), and Lin et al. in 2020 (20). Therefore, our finding can be considered as an additional document that

maternal age should be considered a universal issue and health policymakers should be training and awareness of mothers regarding the complications and risks of preg-

nancy at old ages. One of the other results of the present study was the relationship between PC and sleep quality. This was in agreement with findings reported by Gunal and Demirturk in 2022 (21), Effati-Daryani et al. in 2021 (22), Qiu et al. in 2012 (23), and Ertmann et al. in 2020 (24). Therefore, our finding can be considered as an additional document that sleep quality should be considered a universal issue, and education and counseling regarding sleep quality are recommended for pregnant women by healthcare workers.

5.1. Limitations

The current study was conducted with several limitations. First, regarding the difficult and serious conditions of pregnant women and their inability to answer questions, their attendants completed a number of questionnaires (relies). Secondly, given the nature of the study design, the association of PC with its factors is unreliable.

5.2. Conclusions

The present study assessed the frequency of pregnancy complaints and the effective socio-demographic factors in pregnant women referred to Neyshabur health centers. We found that PC was moderate in pregnant women. Maternal age and bad sleep quality factors increase the possibility of the occurrence of a pregnancy-related complaint. So, it is recommended that healthcare providers develop and implement educational interventions to improve sleep quality and pregnancy awareness at older ages.

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Footnotes

Authors' Contribution: H. A. conceived and designed the evaluation and drafted the manuscript. F. D. collected the clinical data and participated in designing the evaluation, performed parts of the statistical analysis, and helped to draft the manuscript. H. J. collected the clinical data and revised the manuscript and performed the statistical analysis, and revised the manuscript. F. Y. collected the clinical data, performed parts of the statistical analysis, and revised the manuscript. F. Kh. re-analyzed the clinical and statistical data and revised the manuscript. All authors read and approved the final manuscript.

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Ethical Approval: This study was approved by Neyshabur University of Medical Sciences (with the code of ethics of IR.NUMS.REC.1400.027).

Informed Consent: Informed consent was obtained from all participants.

References

1. Karimi FZ, Dadgar S, Abdollahi M, Yousefi S, Tolyat M, Khosravi Anbaran Z. [The relationship between Minor Ailments of Pregnancy and Quality of life in pregnant women]. *Iran J Obstet Gynecol Infertil*. 2017;**20**(6):8–21. Persian. https://doi.org/10.22038/ijogi.2017.9320.

2. de Haas S, Ghossein-Doha C, van Kuijk SM, van Drongelen J, Spaanderman ME. Physiological adaptation of maternal plasma volume during pregnancy: a systematic review and meta-analysis. *Ultrasound Obstet Gynecol*. 2017;**49**(2):177–87. [PubMed ID: 28169502]. https://doi.org/10.1002/uog.17360.

3. Watson ED, Van Poppel MNM, Jones RA, Norris SA, Micklesfield LK. Are South African Mothers Moving? Patterns and Correlates of Physical Activity and Sedentary Behavior in Pregnant Black South African Women. *J Phys Act Health*. 2017;**14**(5):329–35. [PubMed ID: 28169573]. https://doi.org/10.1123/jpah.2016-0388.

4. Hacker M, Firk C, Konrad K, Paschke K, Neulen J, Herpertz-Dahlmann B, et al. Pregnancy complications, substance abuse, and prenatal care predict birthweight in adolescent mothers. *Arch Public Health*. 2021;**79**(1):137. [PubMed ID: 34325740]. [PubMed Central ID: PMC8320202]. https://doi.org/10.1186/s13690-021-00642-z.

5. Shojaei Sourk S, Askarizadeh G, Mousavi Nasab H. [The Effectiveness of Relaxation Training on General Health and Sleep Quality of Pregnant Women in the Last Trimester of Pregnancy]. *J Shahid Sadoughi Univ Med Sci*. 2017;**24**(11):887–98. Persian.

6. Couto ER, Couto E, Vian B, Gregorio Z, Nomura ML, Zaccaria R, et al. Quality of life, depression and anxiety among pregnant women with previous adverse pregnancy outcomes. *Sao Paulo Med J*. 2009;**127**(4):185–9. [PubMed ID: 20011922]. https://doi.org/10.1590/s1516-31802009000400002.

7. Ibanez G, Blondel B, Prunet C, Kaminski M, Saurel-Cubizolles MJ. Prevalence and characteristics of women reporting poor mental health during pregnancy: Findings from the 2010 French National Perinatal Survey. *Rev Epidemiol Sante Publique*. 2015;**63**(2):85–95. [PubMed ID: 25841615]. https://doi.org/10.1016/j.respe.2015.02.023.

8. Aj N, Samii Rad F, Kalhor M, Hasanpour K, Alipour M, Montazeri A. [Sexual quality of life in pregnant women: A cross sectional study]. *Payesh*. 2018;**17**(4):421–9. Persian.

9. Mirmolaei ST, Khakbazan Z, Kazemnejad A, Azari M. [Prenatal Care Utilization Rate and Patients Satisfaction]. *J Hayat*. 2007;**13**(2):31–40. Persian.

10. Jouybari L, Sanagu A, Chehregosha M. [The Quality of Pregnant Women Life with Nausea and Vomiting]. *Qom Univ Med Sci J*. 2012;**6**(2):88–94. Persian.

11. Aghayosefi AR, Moradi K, Safari NA, Ghazi S, Amiri F. [The study of relationship between marital satisfaction with physical problems during pregnancy and the related factors in pregnant women of khorramabad city]. *Yafteh*. 2011;**13**(1):125–34. Persian.

12. Barjasteh S, Moghaddam Tabrizi F. [Antenatal anxiety and pregnancy worries in association with marital and social support]. *Nurs Midwifery J*. 2016;**14**(6):504–15. Persian.

13. Kariman N, Heydari A, Ahmadi F. [Investigation pregnancy problems in couples with history of infertility, abortion and unwanted pregnancy, Mahdieh hospital of Tehran, 1396]. *Res Med*. 2019;**43**(4):264–70. Persian.

14. Masoudi F, Hashemian M, Mehri A. [Studying the Frequency of Common Complaints during Pregnancy and Effective Factors on its Mitigation at 20 to 24 Weeks Gestation in Mashhad, 2017]. *Navid No*. 2018;**21**(65):49–58. Persian. https://doi.org/10.22038/nnj.2018.31146.1120.

15. Shafti V, Zakeri Hamidi M. [Relationship between nausea and pregnancy vomiting and fetus gender]. *J Neyshabur Univ Med Sci*. 2017;**5**(1):66–72. Persian.

16. Azevedo WF, Diniz MB, Fonseca ES, Azevedo LM, Evangelista CB. Complications in adolescent pregnancy: systematic review of the literature. *Einstein (Sao Paulo)*. 2015;**13**(4):618–26. [PubMed ID: 26061075]. [PubMed Central ID: PMC4878642]. https://doi.org/10.1590/S1679-45082015RW3127.

17. Kebede ZT, Yigezaw GS, Yilma TM, Delele TG. Prevalence of pregnancy-related complications and associated factors among reproductive-aged women in northwest Ethiopia: A community-based retrospective cross-sectional study. *Int J Gynaecol Obstet*. 2021;**154**(1):62–71. [PubMed ID: 33277700]. https://doi.org/10.1002/ijgo.13516.

18. Tanaka MJ, Forman JM, Otwell AG, Frischmann LD, Jones LC, Szymanski LM. Characterization of knee dysfunction and related risk factors during pregnancy. *Phys Sportsmed*. 2022;**50**(1):78–83. [PubMed ID: 33507121]. https://doi.org/10.1080/00913847.2021.1882277.

19. Londero AP, Rossetti E, Pittini C, Cagnacci A, Driul L. Maternal age and the risk of adverse pregnancy outcomes: a retrospective cohort study. *BMC Pregnancy Childbirth*. 2019;**19**(1):261. [PubMed ID: 31337350]. [PubMed Central ID: PMC6651936]. https://doi.org/10.1186/s12884-019-2400-x.

20. Lin J, Huang J, Zhu Q, Kuang Y, Cai R, Wang Y. Effect of Maternal Age on Pregnancy or Neonatal Outcomes Among 4,958 Infertile Women Using a Freeze-All Strategy. *Front Med (Lausanne)*. 2020;**6**:316. [PubMed ID: 31998735]. [PubMed Central ID: PMC6965061]. https://doi.org/10.3389/fmed.2019.00316.

21. Gunal A, Demirturk F. Occupational hazards, sleep quality and musculoskeletal problems of pregnant workers. *J Obstet Gynaecol*. 2022;**42**(2):215–9. [PubMed ID: 34027776]. https://doi.org/10.1080/01443615.2021.1904221.

22. Effati-Daryani F, Mohammad-Alizadeh-Charandabi S, Mohammadi A, Zarei S, Mirghafourvand M. Fatigue and sleep quality in different trimesters of pregnancy. *Sleep Sci*. 2021;**14**(Spec 1):69–74. [PubMed ID: 34917276]. [PubMed Central ID: PMC8663733]. https://doi.org/10.5935/1984-0063.20200091.

23. Qiu C, Gelaye B, Fida N, Williams MA. Short sleep duration, complaints of vital exhaustion and perceived stress are prevalent among pregnant women with mood and anxiety disorders. *BMC Pregnancy Childbirth*. 2012;**12**:104. [PubMed ID: 23031583]. [PubMed Central ID: PMC3514205]. https://doi.org/10.1186/1471-2393-12-104.

24. Ertmann RK, Nicolaisdottir DR, Kragstrup J, Siersma V, Lutterodt MC. Sleep complaints in early pregnancy. A cross-sectional study among women attending prenatal care in general practice. *BMC Pregnancy Childbirth*. 2020;**20**(1):123. [PubMed ID: 32087675]. [PubMed Central ID: PMC7036174]. https://doi.org/10.1186/s12884-020-2813-6.