Quality of Life in Pregnant Women with Sleep Disorder

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Received June 2012; Revised and accepted October 2012

Abstract

Objective: Sleep disorders are common complaints of women during pregnancy. These disorders are the result of physiological, hormonal, physical changes, affecting before, during, and right after pregnancy. This study aimed to evaluate the quality of life of pregnant women with sleep disorders in the second trimester.

Materials and methods: In this cross-sectional study, data was collected with continuous sampling method. A total of 100 pregnant women with sleep disturbances in their second trimesters were recruited in this study. The participant referred to two elected health centers in West Azerbaijan University of Medical Science (One and three numbers of health care centers) in order to get prenatal care in the city of Maku, West Azerbaijan, Iran. The data was gathered using the personal information forms and the questionnaires, prepared by the World Health Organization Quality of Life (WHOQOL: BREF). To analyze the collected data, different statistical methods, like frequency tables, Pearson, Spearman and ANOVA were applied.

Results: The results indicate that the mean sleep quality is 8.62 ± 2.81 in pregnant women with sleep disorders or poor quality of sleep in the second trimester. Quality of life ($p \leq 0.03$) and one of domains, including psychological health ($p \leq 0.02$) related to quality of sleep.

Conclusion: Given that a large percentage of women suffer from sleep disorders in pregnancy, we hope during this period, in addition to usual care, codified programs is done to evaluate, detection and Diagnosis of this disorder.

Keywords: Quality of life, Pregnant women, Sleep disorder

Introduction

Pregnancy is the most sensitive and most enjoyable part of a woman's life (1). Sleep patterns, ability to perform tasks of daily living, as well as quality of life in the pregnant woman are affected by systematic variations caused by hormonal, emotional, mental, and physical factors (2,3,4). Changes in sleep patterns during pregnancy may increase from 13 to 80 percent in the first trimester, then from 66 to 97 percent in the third trimester (5). According to the National Sleep (2007), 79% of the pregnant women suffer from sleep disorders. More than 72 percent of pregnant women experience frequently waking up during the night (6). Change in sleep patterns leads to daily dysfunction, maternal fatigue, loss of family welfare and increasing of car accident. In addition, reduce psychological relaxation, inducing insomnia, leads to increased

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anxiety as well as fear of child care and accepting maternal role in the family. Sleep deprivation leads to decrease in function of immune system, hypothalamus, pituitary and adrenal. Therefore, it causes to reduce glucose tolerance, hypertension and ability of individuals, while indirectly increases risk of cardiovascular events (7-9). Lack of sleep can cause drowsiness during the day and can increase social and occupational problems. Also, irritability, aggressive behavior and less social interaction among people who are suffering from sleep deprivation significantly is higher than other people (10,11). In this regard, a review of studies which represent sleep disorders in pregnancy indicates the increase risk of preterm birth, low birth weight.

Increased complications during pregnancy and delivery, prolonged labor, delivery with tools , cesarean section, depression during pregnancy and after delivery (postpartum blues), as well as negative impact on families and society (12-14). Also, many efforts for reducing maternal mortality in developed countries have led to extension of prenatal care. According to the World Health Organization (WHO), health and welfare means to be free from physically, mentally and socially caused disease and disability. However, prenatal care in developing countries are exceeded form traditional aid to the prevention, diagnosis, management of problems affecting maternal and children health; in addition, it provides extensive assistance in order to support and encourage families to cope with the psychological aspects of birth and social awareness in the field of birth. This expanded support is the reflection of the improved quality of life that refers to the comprehensive assessment of health care (15). There is a different variation aspect of quality of life in health, physical, emotional and social comfort, which is important for policy makers and health care community in planning for the care of mothers and babies. Some factors improving quality of sleep have to be considered, like necessities of behavioral characteristics of people, daily activities, along with environmental, physical and psychological health factors (16). Studies have shown that decrease in vitality causes decrease in quality of life during a normal pregnancy (17) . You repeated this several times. Few research have examined the quality of life in pregnant women suffering from sleep disorders in Iran.

Some researches has also been done in this field in Iran and has revealed that understanding quality of life is influenced by beliefs and cultures, but further research is required in this area. Thus, the researchers were decided to conduct this study in order to increase the information about well being of mental and physical in women during pregnancy. This could be a step towards the realization of the motto (18) "Healthy mother and healthy child".

Materials and methods

In this study, 100 pregnant women with insomnia or poor sleep quality (According to the Pittsburgh Sleep Quality) After obtaining informed consent , Were recruited Who referred to two health-elected city center shuttle (which were selected by lottery from among four city center) for receiving prenatal care from January 1390 to the end of June 1391 . Inclusion criteria included: Iranians being literate, lack of physical and psychiatric illnesses (medical and psychological), drugs, alcohol, sleeping drugs and hormones, gestational age 15-25 weeks. Elimination criteria were included: subjects withdrew from the study, the occurrence of a traumatic event or loss of a family member during the study, non-significant change in unpredictable conditions such as sleep, travel, shift and diet taking any additional medication during the study.

Tools used in this study were included: forms of demographic characteristics (individual and birth including age, education, occupation, parity, gestational age, socioeconomic status, level of partner support, life satisfaction, desire for current pregnancy and smoking of pregnant woman and her husband), Pittsburgh sleep quality questionnaire (Pittsburgh) and summarized in the World Health Organization quality of Life Questionnaire (WHOQOL-BREF), respectively.

The Pittsburgh Sleep Quality Index (PSQI) was a retrospective self-report questionnaire that measures sleeping patterns and sleep disturbances that existed during the previous month. The PSQI yields a global score ranging from 0 to 21, with higher scores indicating worse sleep quality. The PSQI had strong test-retest reliability, and using a cut off score of 5, the measure demonstrated a sensitivity of 89.6% and specificity of 86.5% in separating people with and without insomnia (19). The overall reliability coefficient of the Chinese version PSQI was previously evaluated as .85 (20). A test-retest reliability (r) of .74 over one month was also found for the instrument (21). The Nineteen score of sleep assesses with the Pittsburgh Sleep Quality Index in the seven "component" scores: subjective sleep quality,

sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medication, and daytime dysfunction. The sum of scores for these seven components yields one global score. Individuals with PSQI scores <5 were categorized as good sleepers, and those with scores >=5 were classified as poor sleepers.

The School of Nursing and Midwifery, Iran University of Medical Sciences, The Pittsburgh Sleep Quality Index (PSQI) validity Was examined through content validity in two study conducted by malekzadegan et al in 1385 and Hossein Abadi et al in 1386 Was evaluated specificity of 87% with a sensitivity of 90%, Reliability Was determined test-retest by malekzadegan et al and measured By Hossein Abadi et al with Cronbach's alpha at 88% (22,23).

In this study, in order to validity, the questionnaires have given to thirteen faculty members of Tehran University of Medical Sciences School of Nursing and Necessary reforms were made.

Validity and reliability of quality of Life Questionnaire is evaluated by Nejat and colleagues (24).

In this study, it will be used test retest to determine the reliability. Namely, it were gave to Fifteen of the pregnant women were eligible and Cronbach's alpha coefficient was calculated after ten days which was 82% and the people in the sample were not calculated. Reliability, quality of life questionnaires determined between 75/0-84/0 with Cronbach's by the World Health Organization in 1385, and its reliability have confirmed in Several Iranian studies.

The third section is summarized the World Health Organization questionnaire Quality of Life (WHOQOL-BREF) and it measures Quality of life with 24 questions, physical health domains (7 questions), mental health (6 questions), social relations (with 3 items), environmental health (with 8 questions). Domains questions of physical health Were about the power of motion, activities of daily living, work capacity, energy, pain, sleep, mental health Includes questions about Imagine appearance, negative feelings, positive feelings and confidence, thinking, learning, memory and concentration, religion and mental condition, Environmental health questionnaire, asks the financial resources, physical security, health care, social and physical environment, habitat, opportunities for acquiring new information and skills, recreational opportunities, physical environment (noise, air pollution, etc.) and transportation . This questionnaire is based on Likert scale that is scored based on responses to the 1-5 score awarded.

Researcher and research assistance to collect data, were came to Maku health centers from 9 am to 12 daily and After maternal satisfaction with the conditions of the study, were attracted ,They were requested to complete Pittsburgh Sleep Quality questionnaire in the quiet place and far away from the noise and In the presence of the researcher and research assistance, after the questionnaire survey, The two-part questionnaire included demographic characteristics are summarized in the World Health Organization Quality of Life questionnaire (WHOQOL-BREF) was given to pregnant women who earn a score of 5 or higher to complete Up to 30 minutes and was used descriptive and analytical statistical methods (frequency tables, Pearson, Spearman and ANOVA) For analyzing data.

It is mentioned, as regard to the sixth Pittsburgh Sleep Quality tools are devoted to the use of sleep medications in pregnancy and this criteria are contraindicated in pregnancy, In this study, So this score of this component of the instrument Was placed zero and not analyzed after scoring the instrument.

The Ethics Committee of Tehran University of Medical Sciences' Faculty of Nursing and Midwifery approved the study; and all participants gave their informed consent to be interviewed.

Results

In this study, according to Table 1 (Frequency distribution of demographic characteristics of participants), the mean age of women was 26.86 ± 6.51, parity 1.97 ± 1.00, gestational age 18.11± 2.08. The 88 percent of pregnant women were housewives, 43 percent have primary school education, 78 percent of the moderate economy, 97 percent has satisfaction of life, 85 percent of pregnant women and 91 percent of their Husband tend to Current pregnancy, 99 percent of pregnant women and 60 percent of their Husband were not smokers.

There were significant differences between the job ($p \leq 0.009$), education level ($p \leq 0.03$), parity ($p \leq 0.004$), the partner support ($p \leq 0.000$) and life satisfaction ($p \leq 0.004$) to quality of life. The age ($p \leq 0.01$) and parity ($p \leq 0.01$) were significantly associated with sleep quality score, but there were significant inverse related between age ($p \leq 0.008$) and parity ($p \leq 0.003$) to quality of life.

Frequency distribution of participants according to sleep quality and its components shown in Table 2. The mean of sleep quality score in pregnant women were 8.62 ± 2.81.

Table 1: Demographic status of a sample of pregnant women living in Maku Township

Demographic status		Prevalence (%)	Mean ± SD	P value *
Mother's age	15-20	18 (18)	26.86 ± 6.51	P ≤ 0.008
	21-25	28 (28)		
	26-30	25 (25)		
	31-35	20 (20)		
	36-40	6 (6)		
	41-45	2 (2)		
	46-50	1(1)		
Mother's education	primary	43 (43)	------	P = 0.31
	steerage	24 (24)		
	diploma	19 (19)		
	collegiate	14 (14)		
Mother's job	Homy	88 (88)	------	= 0.08
	Employed	12 (12)		
Gravida	One	42 (42)	1.97 ± 1.00	P ≤ 0.004
	Two	29 (29)		
	Three	19 (19)		
	Four=<	10 (10)		
Gestational age (week)	15-17	47 (47)	18.11 ± 2.08	P = 0.61
	18-20	49 (49)		
	21-23	2 (2)		
	24-25	3 (3)		
Economical status	Good	17 (17)	------	P = 0.22
	Moderate	78 (78)		
	Bad	5 (5)		
Husband support	Good	64 (64)	------	P ≤ 0.002
	Moderate	30 (30)		
	Bad	6 (6)		
Life satisfaction	yes	97 (97)	------	P ≤ 0.02
	No	3 (3)		
Tendency of pregnancy (Mother)	yes	85 (85)	------	P = 0.26
	No	15 (15)		
Tendency of pregnancy (Husband)	yes	91 (91)	------	P = 0.16
	No	9 (9)		
Smoking Mother	yes	1 (1)	------	P = 0.12
	No	99 (99)		
Smoking Husband	yes	40 (40)	------	P = 0.56
	No	60 (60)		
Total	------	100 (100)	------	

* The p values were tested using the ANOVA, Chi-square and Fisher

Frequency distribution of participants according to quality of life and four domains include: physical health, psychological health, social and environmental health shown in Table 3.

The Comparison between the component of quality of sleep and four domains of quality of life was shown in Table 4. The results of Pearson and spearman correlation test demonstrate that there was significant relationship between the quality of life score and sleep quality score ($p \leq 0.04$), But only within the domains of quality of life, there was a significant relationship between Psychological health ($p \leq 0.02$) and sleep quality.

Discussion

Recent research indicates that the quality of life of pregnant women is related to their sleep quality, Sleep disorder(the fifth component of PSQI) effects on psychological, social health and quality of life in pregnant women also Subjective sleep quality (The

Table 2: Seven component of sleep quality in pregnant women

component of sleep quality		n (%)	Mean ± SD
subjective sleep quality (component 1)	Very good	5 (5)	-------
	Good	69 (69)	
	Bad	21 (21)	
	Very bad	5 (5)	
sleep latency (component 2)	0	10 (10)	2.9 ± 1.59
	1 – 2	30 (30)	
	3 – 4	48 (48)	
	5 – 6	12 (12)	
sleep duration (component 3)	> 7 hours	40 (40)	6.38 ± 1.44
	6 - 7 hours	29 (29)	
	5 - 6 hours	24 (24)	
	< 5 hours	7 (7)	
habitual sleep efficiency (component 4)	> 85%	15 (15)	73.65 ± 12.35
	75 - 84%	35 (35)	
	65 - 74%	29 (29)	
	< 65%	21 (21)	
sleep disturbances (component 5)	0	1 (1)	9.6 ± 3.77
	1-9	55 (55)	
	10-18	43 (43)	
	19-27	1 (1)	
Use of sleeping medication (component 6)	0	0	------
daytime dysfunction (component 7)	0	13 (13)	3.15 ± 2.01
	1-2	24 (24)	
	3-4	38 (38)	
	5-6	25 (25)	
sleep quality	5 – 21	100	8.62 ± 2.81
Total	----------	100 (100)	-------

Table 3: Quality of life and Domains in pregnant women

Quality of life and Domin	Score	Mean ± SD
Physical health (Domin 1)	1-35	24.99 ± 3.99
Psychological health (Domin 2)	1-30	20.65 ± 2.86
Social relationships (Domin 3)	1-15	11.21 ± 2.16
Environmental Quality of life (Domin 4)	1-40	27.61 ± 3.68
Total Quality of life	1-130	91.05 ± 10.04

Table 4: Comparison Of seven component of sleep quality with domains of quality of life

Life / Sleep	Physical health	Psychological health	Social relationships	Environmental Quality of life	Quality of life
subjective sleep quality	p≤ 0.000*	p≤ 0.000*	p≤ 0.03*	p≤ 0.003*	p≤ 0.000*
sleep latency	p= 0.23	p= 0.26	p= 0.07	p= 0.84	p= 0.29
sleep duration	p= 0.76	p= 0.25	p= 0.42	p= 0.82	p= 0.60
habitual sleep efficiency	p= 0.44	p= 0.91	p= 0.84	p= 0.96	p= 0.76
sleep disturbances	p≤ 0.001	p= 0.51	p≤ 0.002	p= 0.31	p≤ 0.004
daytime dysfunction	p= 0.99	p≤ 0.01	p= 0.90	p= 0.62	p= 0.30
Sleep quality	p= 0.08	p≤ 0.02	p= 0.12	p= 0.32	p≤ 0.03

* The p values were tested using the spearman correlation other items Pearson

second component of PSQI) associated with quality of life, physical, psychological, social and environmental health. Quality of sleep and quality of life has reduced with increasing age and gravid.

The results of this study are consistent with Deborah and colleagues studied in 2010 (27), Showed that the pregnant women with sleep problems, decreased physical function and social health, increased bodily pain and limitations in performing daily duties due to physical problems.

Also Ekaterina study in 2010 (14), Showed the potential effect of distress, physical symptoms and poor sleep quality or sleep problems on quality of life is associated with depressive symptoms in late pregnancy, As regards the effect of sleep quality on mental health is consistent with current research.

Tara and Danielle research in 2005 (25), showed Insufficient sleep in 14 days of months have been associated with general health, physical, mental, daily activity, daily depression symptoms, discomfort, pain, desire for smoking, alcohol, Inactivity and obesity. Because the relationship between subjective sleep quality (The first component of PSQI) with physical, mental, social and environmental health and quality of life also daily dysfunction (the Seventh component of PSQI) and psychological health, It may be that included daily habits and Symptoms of Depression, is In the line with current research.

The study results of Zeitlhofer and Associates in 2000 (26), showed Sleep quality decreased with increasing age, especially in women. Overall quality of life was highest in younger (15±29 years) and lowest in elderly subjects (over 50 years). Life quality decreased with increasing age. Between subjective sleep quality and quality of life a moderate, significant correlation was found (r2=0.6721). According to the findings of the present study is quite consistent with it, except that Zeitlhofer study was performed on both men and women, but the present study was performed on pregnant women in the second trimester of pregnancy.

As regards sleep disturbance can help a lot of problems during pregnancy, delivery and postpartum, In situations where these problems in pregnant women not considered and regarded as normal in this period, In order to maintain physical and mental health of the pregnant women are advised In addition to routine prenatal care programs, counseling programs, special programs for research, diagnosis of sleep disorders, troubleshooting the cause of the disturbance and treatment to prevent takes place to provide maternal and child health In order to achieve the motto "Healthy mother and healthy child".

Like other studies, this study had some limitations, During the answering questions may there are few mental attributes have little impact to answer questions Which was beyond the control of the researcher Also undiagnosed disease, the effect of changes in diet and exercise on sleep pattern could affect the study that were uncontrolled.

Acknowledgments

We would like to thank the pregnant women who participated in this research for their assistance and cooperation. We also express our appreciation to all people in charge at Tehran University of Medical Science, Euromiea University of What?? and the city of Maku for their cooperation. There is no conflict of interest in this article.

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