

# An Evaluation of Rate of Fatigue and Sleep Quality in Pregnant Women: A Cross Sectional Study

Tanvi Banker

Assistant Professor, SPB Physiotherapy College, Surat-(Gujarat), India.

## ABSTRACT

**Background and Purpose:** Pregnancy is accompanied by several psychological, emotional and physical changes that may predispose the woman to fatigue, which can range from mild tiredness to severe exhaustion. Sleep disorders are also especially prevalent in pregnancy due to a series of obvious reasons including pregnancy-associated hormonal, physical and behavioral changes. The purpose of our study was to find out rate of fatigue and quality of sleep in pregnant women and correlation between it.

**Materials and Method:** The research project was conducted after getting consent and clearance from Surat People's Bank Physiotherapy College managed by South Gujarat Medical Education and Research centre (SGMERC). This study was conducted in private hospitals from different regions of Surat. Total 100 pregnant women had participated in the study. They were provided with Modified Fatigue Impact Scale (MFIS) and Pittsburgh Sleep Quality Index (PSQI).

**Result:** In our study, total 100 pregnant women had participated in the study. Mean value of MFIS is 26.19 and in PSQI is 7.92. Standard deviation in MFIS is 6.675 and in PSQI is 3.231. Correlation is significant at 0.05 level. Based on Statistical Analysis there is weak positive correlation between rate of fatigue and quality of sleep. So, that as rate of fatigue increases the quality of sleep decreases.

**Conclusion:** The result of our study is that, as rate of fatigue increases, the quality of sleep decreases.

**Keywords:** Pregnant women, Rate of fatigue, Quality of sleep.

## INTRODUCTION

Pregnancy, also known as gestation, is the time during which one or more offspring develops inside a woman.<sup>[1]</sup> A multiple pregnancy involves more than one offspring, such as with twins.<sup>[2]</sup> Pregnancy can occur by sexual intercourse or assisted reproductive technology.<sup>[3]</sup> A pregnancy may end in a live birth, abortion, or miscarriage.<sup>[4]</sup> Pregnancy is divided into three trimesters.<sup>[1]</sup>

Prenatal care improves pregnancy outcomes.<sup>[9]</sup> Prenatal care may include taking extra folic acid, avoiding drugs and alcohol, regular exercise, blood tests, and regular physical examinations.<sup>[9]</sup> Complications of pregnancy may include disorders of high blood pressure, gestational diabetes, iron-deficiency anemia, and severe nausea and vomiting among others.<sup>[10]</sup> In the ideal childbirth labor begins on its own when a woman is "at term".<sup>[11]</sup>

Physical fatigue is the transient inability of muscles to maintain optimal physical performance, and is made more severe by intense physical exercise.<sup>[12]</sup> Mental fatigue is a transient decrease maximal cognitive performance resulting from prolonged periods of cognitive activity. Mental fatigue can manifest as somnolence, lethargy, or directed attention fatigue.<sup>[13]</sup> Fatigue and 'feelings of fatigue' are sometimes confused.<sup>[14]</sup> Unlike weakness, fatigue usually can be alleviated by periods of rest.

Pregnancy is accompanied by several psychological, emotional and physical changes that may predispose the woman to fatigue, which can range from

mild tiredness to severe exhaustion.<sup>[15]</sup> Fatigue is defined as a feeling of consistently decreased energy; it is a symptom of many diseases, including anaemia, infection and hypothyroidism and is common during pregnancy.<sup>[16],[17]</sup> Most pregnant women feel some fatigue; however, some suffer from severe fatigue. A study of 197 pregnant Chinese women found that 95% suffered from fatigue during pregnancy.<sup>[18]</sup>

Fatigue is positively correlated with low sexual activity and social interactions, as well as low maternal ability to provide infant care.<sup>[16]</sup> The MFIS, derived from the original 40-item Fatigue Impact Scale,<sup>[20]</sup> is a 21- item scale recently developed by the US NMSS. It has been classified as multidimensional scale and is intended to analyse different aspects of fatigue by assessing impact on physical, cognitive and psychosocial functioning. The combination of 9 items for physical status (pMFIS), 10 items for cognitive status (cMFIS), and 2 items for psychosocial function status (pMFIS), renders the global score of the MFIS.<sup>[21]</sup>

Sleep is a basic necessity for survival, since long-term sleep deprivation leads to severe physical and cognitive impairment, even death<sup>[22]</sup>. However, about 50 % people throughout the world encounter one or more sleep disorders including insomnia, narcolepsy, somnambulism and the circadian rhythm sleep disorders<sup>[23]</sup>. Sleep disorders are especially prevalent in pregnancy due to a series of obvious reasons including pregnancy-associated hormonal, physical and behavioural changes<sup>[24,25]</sup>. Accumulating evidence shows that sleep deprivation during pregnancy not only increases the risk of maternal psychiatric disorders.<sup>[26]</sup> On the basis of these observations, investigators have suggested that it may be important to screen for and address sleep problems among pregnant women<sup>[27]</sup>. To that end, the Pittsburgh Sleep Quality Index (PSQI), a widely used self-reported measure of sleep quality with acceptable psychometric properties when

used among men and non-pregnant women<sup>[29]</sup>, has been suggested as appropriate for use among pregnant women<sup>[27,28]</sup>.

## METHODOLOGY

Cross sectional study was conducted on 100 pregnant women in Surat. Study duration was of 6 months.

**Inclusion criteria:** Women with pregnancy of any trimester. Subject should be knowing English. **Exclusion criteria:** Pregnancy with any gross medical or surgical complication and pregnant women not willing to participate. 100 Pregnant women were included in the study to check rate of fatigue and quality of sleep. Pregnant women were ask to fill inform consent form Subject satisfying with inclusive and exclusive criteria were selected for study. The MFIS was used to check rate of fatigue and PSQI was used to check quality of sleep in pregnant women. The MFIS is an objective measure of fatigue. The questionnaire consists of 21 questions. The PSQI is an objective measure of sleep. The questionnaire consists of 9 questions related to usual sleep habits during pregnancy. The entire questions have been explained to them. Interpretation of PSQI= If Pittsburgh score is 5 or more than 5 then sleep quality is Poor and MFIS=More the score of MFIS, More the rate of Fatigue.

## RESULT

Table-1

Descriptive Statistics			
	Mean	Std. Deviation	N
MFI	26.19	6.675	100
PSQI	7.92	3.231	100

Table-2

Correlations			
		MFI	PSQI
MFI	Pearson Correlation	1	.211*
	Sig. (2-tailed)		.036
	N	100	100
PSQI	Pearson Correlation	.211*	1
	Sig. (2-tailed)	.036	
	N	100	100

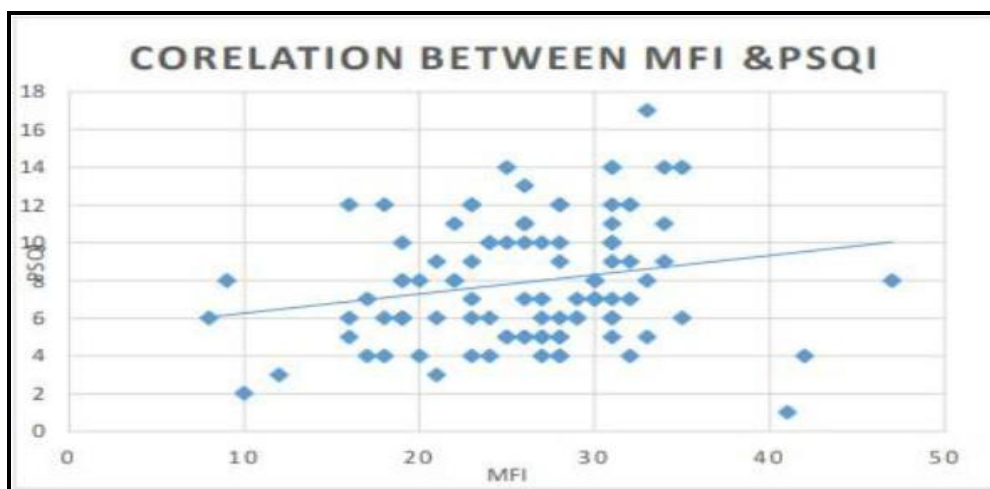
\*. Correlation is significant at the 0.05 level (2-tailed).

Table Shows mean and standard deviation based on their fatigue rate and sleep quality in pregnant women.

Table shows correlation between rate of fatigue and quality of sleep based on MFIS and PSQI.

Table-3

Descriptive Statistics						
	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
MFI	100	8	47	26.19	.668	6.675
PSQI	100	1	17	7.92	.323	3.231
Valid N (listwise)	100					



Graph shows correlation between MFIS and PSQI. Based on graph there is weak positive correlation between MFIS and PSQI.

### DISCUSSION

The main aim of our study was to find out rate of fatigue and quality of sleep in pregnant women and correlation between it. Pregnancy is accompanied by several psychological, emotional and physical changes that may predispose the woman to fatigue, which can range from mild tiredness to severe exhaustion. Sleep disorders are also especially prevalent in pregnancy due to a series of obvious reasons including pregnancy-associated hormonal, physical and behavioral changes

The previous study conducted by M. Pourjavad on “Study of fatigue in working pregnant women.” They concluded the fatigue was higher in the first than the two other trimester of pregnancy. In other study conducted by Lalitha Venugopal on

“Assessment of sleep quality in south Indian pregnant women.” They concluded subjective sleep quality, sleep latency, sleep disturbances were found to be significantly higher in second and third trimester ( $p < 0.0001$ ) pregnant women.

In present study total 100 pregnant women took participation in the research. Mean value of MFIS is 26.19 and in PSQI is 7.92. Standard deviation in MFIS is 6.675 and in PSQI is 3.231. Correlation is significant at 0.05 level. Based on test, there is weak positive correlation between rate of fatigue and quality of sleep. So, that as rate of fatigue increases, the quality of sleep decreases.

### CONCLUSION

Based on this study there is weak positive correlation between modified fatigue impact scale (MFIS) and Pittsburgh sleep quality index (PSQI). So, as the rate of fatigue increases quality of sleep decreases.

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