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Research Article

EFFECT OF NAUSEA, VOMITING AND NUTRITIONAL STATUS ON QUALITY OF LIFE DURING FIRST TRIMESTER PREGNANCY

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ABSTRACT

Pregnancy is a point in time in which most of the women experience forceful physical changes and a great deal of emotional disturbances. The complex changes of pregnancy have an immense effect on the quality of life in these women as these changes will not only affect their physical variables but also their mental and social variables. Aim: This study aims to determine the effect of nausea, vomiting and nutritional status on quality of life during first trimester of pregnancy. Method: This study was a prospective cross-sectional study. Assessing quality of life of pregnant women using questionnaires (NVPQOL, SF12, and Nutritional Status Questionnaire) and correlation between them using Pearson Correlation Coefficient. 125 pregnant women were enrolled in their first trimester. About 57.3% were in the age group of 18-25, 36% in the age group of 26-30 and 4.9% were above 30 years of age. Conclusion: There is an important relationship between Nausea, Vomiting and Nutritional status with Quality of life during pregnancy. And more care should be given by the physicians to the pregnant women about these parameters especially during their first trimester.

Keywords :- First Trimester Pregnancy, NVPQOL, Nausea, Vomiting

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INTRODUCTION

Pregnancy is a period in which most of the women experience forceful physical changes and a great deal of emotional disturbances. The complex changes of pregnancy have an immense effect on the QOL in these women as these changes will not only affect their physical variables but also their mental and social variables.[3]

Quality of life (QOL)

WHO (World Health Organization) describes QOL as "the individual's perception of their life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns".[1]

Nausea and vomiting

Nausea commonly referred to as morning sickness, is one of the most universal pregnancy symptoms affecting approximately fifty to ninety percentage of pregnant ladies during their first trimester. Usually nausea and vomiting become more noticeable in between fourth as well as sixth week of pregnancy and a peak in eighth and twelfth week.

Although QOL is a non-negligible outcome when evaluating the burden of illness of health problems, the impact of NVP on HRQOL in pregnant women tends to be minimized. Nevertheless, research has shown that NVP have a significant impact on family life as well as the ability to perform usual daily activities, social functioning and development of stress situations. NVP

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can even lead in some cases to depressive feelings and elective termination of pregnancy.[2]

Health-Related Quality of Life (HRQOL)

It is given that other than life satisfaction and well-being, health is also considered as an important quality of existence. Health as a vital element of QOL is called as Health Related Quality of Life.[6]

Nutritional status

Maternal nutrition and health is considered as the most important regulator of human fetal growth. Improved maternal nutrition has been associated with increased fetal growth and decreased adverse birth outcomes in developing countries and in nutrient.

The expectant mother must be well-nourished to meet the needs of her fetus, her own needs and to prepare the body for breastfeeding. The deleterious effects of severe deficiency, especially in the periconceptional period, are established for many nutrients.

METHODOLOGY

The Institutional Ethic Committee of The Oxford Medical College and Research Centre, Bengaluru has given the approval for the conduct of research by the letter Ref.No. IEC/TOMCHRC/064/17-18.

MATERIALS:

This study was a prospective cross-sectional study approved by the Institutional Ethic Committee of The Oxford Medical College and Research Centre, Bengaluru. A total of 125 participants were included in the study. The study was conducted for a period of 6 months and included pregnant women from the department of Obstetrics and Gynecology during the year of 2017-2018. All the relevant and necessary information of the patient has been collected from the medical records. Questions were asked using questionnaires like NVPQOL, SF12, NUTRIONAL STATUS questionnaires and consent from the participants has taken before giving questionnaires. All the participants included based on the inclusion criteria and those who are not willing to participate excluded from the study. The statistical software namely SAS 9.2, SPSS 15.0 were used for the analysis of data. Analysis is done in two phases: Descriptive and Inference. Pearson Correlation Coefficient is used for assessing the correlation between the objective parameters.

RESULT

This study is based on observational clinical analysis.

DEMOGRAPHICAL ANALYSIS

The maximum number of participants belongs to the age group of 20-30 years. And the average age of the participants was found to be 25.52±2.90 (Table 1 and Figure1). Based on the study conducted, 63 participants were primiparous and 62 were multiparous (Table 2 and Figure 2). Among 62 multiparous women, the number of abortion/miscarriage reported was 25 times. Among the 25 times of reported abortion/miscarriage 68% were above the age of 25 years and 32% for the age group 18-25 (Table 3 and Figure 3).

NVPQOL AND SF-12 ANALYSIS

Based on the study conducted it was found that participants reported maximum for moderate nausea (40%) and vomiting (65.6%) and few reported for severe nausea (19.2%) and vomiting (16.8%) (Table 4,5 and Figure4). Thus compared to other population the participants in our study site have moderate nausea and vomiting and also found out that there is no strong correlation (weak negative correlation) between NVPQOL and SF-12 scores and also NVPQOL and hemoglobin levels (Table 6).

The NVPQOL scores were analyzed for individual items and domains. Individual items were scored using a 1–7 scale range. The higher being the score, the lower will be the QOL. The participants gave worst ratings to the domains “physical symptoms” and “fatigue”. Moderate were given to “emotions”. This shows that physical symptoms and fatigue may be the two most important factors in decreasing the quality of life.

NUTRITIONAL STATUS ANALYSIS

Based on the questionnaire, about 64% of participants were found to have mixed diet whereas 36% were vegetarians. Most of the women relied more heavily on mixed diet, making their food choices better for improving the quality of life (Table 7 and Figure 5). The frequency of food consumption of 73.60% participants was found to be around 3-4 times. This shows that even if nausea and vomiting were high, the nutritional status of women were not highly affected (Table 8 and Figure 6).
Amongst the most common symptoms of pregnancy, 82.40%-83.20% of participants have reported for the presence of nausea and vomiting, while 20% reported for heartburn, 28% for constipation and 16.80% of participants reported absence of any of the above symptoms (Table 9 and Figure7).

DISCUSSION

The main aim of this study is to assess the effect of nausea, vomiting and nutritional status on QOL of pregnant women in their first trimester. This study utilized three questionnaires: NVPQOL, SF12 and NUTRITIONAL STATUS questionnaires.

In this study, 125 pregnant women were enrolled in their first trimester. About 57.3% were in the age group of 18-25, 36% in the age group of 26-30 and

4.9% were above 30 years of age. Most women who took part in the study had secondary education (7std-12std).

Impact of NVP on QOL

Out of 125 women, 19.2% were suffering from severe nausea, 16.8% from severe vomiting, 40% were suffering from moderate nausea and 65.6% from moderate vomiting. A study conducted by Lacasse and his co-workers showed that presence of NV has a negative impact on the QOL of pregnant women. Participants who reported moderate to severe NV were related with poor QOL. All the domains of NVP were affected.[9]

The study conducted also showed that participants who were working had quit their job because of inconvenience due to nausea, vomiting and fatigue. Participants who reported for higher scores of NV had also reported higher scores for poor appetite thus, indicating that increase in nausea and vomiting decreases the appetite.

Assessment of SF12

In a population of 125 pregnant women, 7 participants reported their general health as poor, 41 as fair, 57 as good, 17 as very good and 3 as excellent. Most of the participants (70-80) complained about health limiting their typical daily activities a little such as, moving a table, climbing several flights of stairs etc. Pain was also found to interfere with their normal work (including work outside the home and household work). The minimum PCS and MCS were found to be 7 and 4 respectively and maximum PCS and MCS were found to be 28 and 26 respectively.

Impact of Nutritional Status on QOL

On the basis of diet, women with mixed diet were more when compared to vegetarian and also food intake of 3-4 times has been seen among women (73.6%) during their first trimester. And only about 40% pregnant women were undernourished based on the BMI (<18). Most of the studies related to nutritional status showed a negative result. A study done by Mohan raj showed that maternal nutritional status is very less. Similar studies took place a number of times in rural area and ended up with the same conclusion.[11] In contradiction to this, our study showed good nutritional status among pregnant women.

It was also observed that multiparous participants had a better knowledge regarding nutrition intake and were able to take better care when compared to primiparous participants.

However, because of the presence of moderate to severe nausea and vomiting, the negative impact on the QOL will not change even if the nutritional status is good.

Comparison of SF12 and NVPQOL Questionnaire

By using correlation analysis, two questionnaires were compared to find out if there is any similar score of QOL for individual women with NVP. And the correlation coefficient-r came with a value of -0.124 which shows that there is no strong correlation (weak negative correlation) between the scores of SF-12 and NVPQOL. The study conducted by Marie Balikova and Radka Buzgova came to the same conclusion of no correlation between the two questionnaires.[10]

Table 1: Age distribution of participating women in years

Age In Years	No. of Participants	%
<20	1	0.8
20-30	118	94.4
31-40	6	4.8
Total	125	100.0

Mean ± SD: 25.52±2.90

Table 2: Distribution of participants based on parity

No. of Pregnancies	No. of Patients	%
1	63	50.4
2	33	26.4
3	19	15.2
4	6	4.8
5	3	2.4
6	1	0.8
Total	125	100.0

Table 3: Comparison on the basis of age and abortion

Age in Years	Number of Abortions	%
18-25	8	6.4
ABOVE 25	17	13.6

Table 4: Comparison between nausea and vomiting

Parameters	No NV	Mild NV	Moderate NV	Severe NV
NAUSEA (%)	16	38.4	40	19.2
VOMITING (%)	17.6	35.2	65.6	16.8

Table 5: Quality of life assessment with NVPQOL in domains and individual items

DOMAINS (Individual Items)	Mean	Standard Deviation	N*
PHYSICAL SYMPTOMS			
NAUSEA	21.25	6.396613687	85
FEELING SICK TO STOMACH	19	9.831920803	76
VOMITING	21.75	4.924428901	87
DRY-HEAVES	8.25	12.01041215	33
POOR APPETITE	12.25	10.65754819	49
SYMPTOMS BEING WORSE IN THE EVENING	11.75	3.5	47
NOT EATING FOR LONGER THAN YOU WOULD LIKE	9.5	3.696845502	38
FEELING WORSE WHEN EXPOSED TO CERTAIN SMELLS	24.25	13.96125591	97
FEELING WORSE WHEN EXPOSED TO CERTAIN FOODS	24.5	14.27118309	98
FATIGUE			
FATIGUE	17.5	4.932882862	70
FEELING WORN OUT AND A LOSS OF ENERGY	13.75	6.849574196	55
FEELING EXHAUSTED	15	8.406346809	60
FEELING TIRED	20.75	8.883505314	83
EMOTIONS			
FEELING EMOTIONAL	9	3.366501646	36
BEING LESS INTRESTED IN SEX	0	0	0
FEELING DOWNHEARTED, BLUE, SAD, UNHAPPY, DEPRESSED, GLOOMY	3.25	4.573474245	13
FEELING FRUSTRATED	3.5	3.31662479	14
FEELING FED UP WITH BEING SICK	3.5	3.109126351	14
NOT FEELING THAT YOUR SYMPTOMS ARE ALL ART OF NORMAL PREGNANCY	1.75	1.258305739	7
FEELING THAT YOU CAN'T ENJOY YOUR PREGNANCY	1.25	0.5	5
LIMITATIONS			
THAT EVERYTHING IS AN EFFORT	3.25	3.304037934	13
FEELING LIKE YOU HAVE ACCOMPLISHED LESS THAN YOU WOULD LIKE	5	6.633249581	20
THAT IT TAKES LONGER TO GET THINGS DONE THAN USUAL	6	7.393691004	24
DIFFICULT PERFORMING YOUR WORK AND ACTIVITIES	10.75	9.142392101	43
DIFFICULT MAINTAINING YOUR NORMAL SOCIAL ACTIVITIES	8	7.527726527	32
RELYING ON YOUR PARTNER FOR DOING THINGS THAT YOU WOULD NORMALLY DO	13	8.041558721	52
DIFFICULT LOOKING AFTER YOUR WORK	10.75	6.184658438	43
DIFFICULT SHOPPING FOR FOOD	7.25	5.965176723	29
DIFFICULT PREPARING OR COOKING MEALS	10.5	7.325753659	42
CUTTING DOWN ON AMOUNT OF TIME YOU SPEND AT WORK OR OTHE ACTIVITIES	4.75	3.862210075	19

*number of women who identified the listed item as problematic (i.e. with 4-some of the time 5 –a good bit of the time, 6 – most of the time or 7 – all of the time).

Table 6: Pearson correlation of NV score with age, BMI, hemoglobin and SF-12 score

r value	P value
-0.195	0.029*
-0.124	0.168

Table 7: Diet distribution of participants

DIET	NO. OF PATIENTS	%
Mixed	80	64.0
Veg	45	36.0
Total	125	100.0

Table 8: Frequency of food consumption

FREQUENCY	PERCENTAGE OF PARTICIPANTS
<3 TIMES	19.20%
3-4 TIMES	73.60%
5-6 TIMES	1.60%
NOT SURE	5.60%

Table 9: Distribution based on symptoms

SYMPTOMS	PERCENTAGE OF PARTICIPANTS
NAUSEA	83.20%
VOMITING	82.40%
HEARTBURN	20%
CONSTIPATION	28%
NONE	16.80%

Fig 1: Age distribution of participating women in years

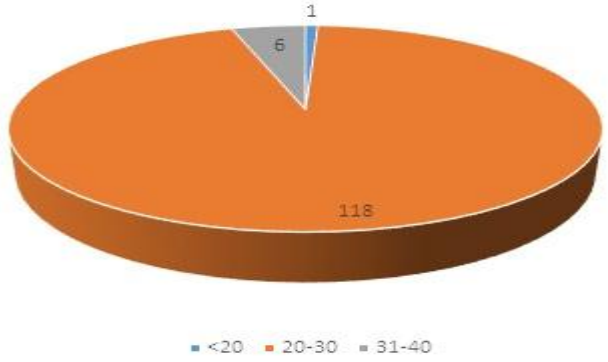


Fig 2: Distribution of participants based on parity

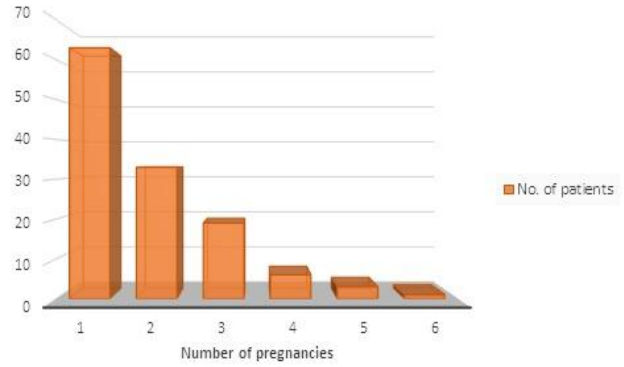


Fig 3: Comparison on the basis of age and abortion

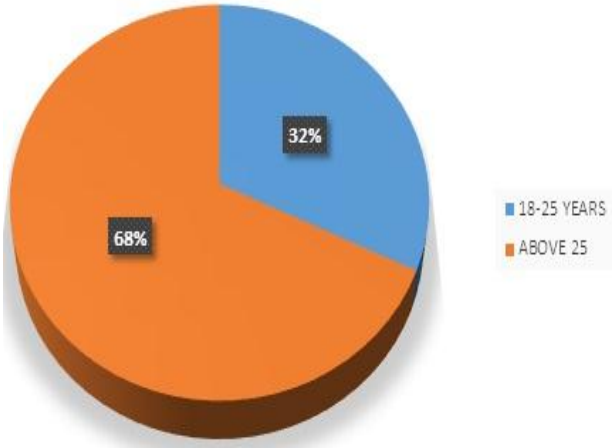


Fig 4: Comparison between nausea and vomiting

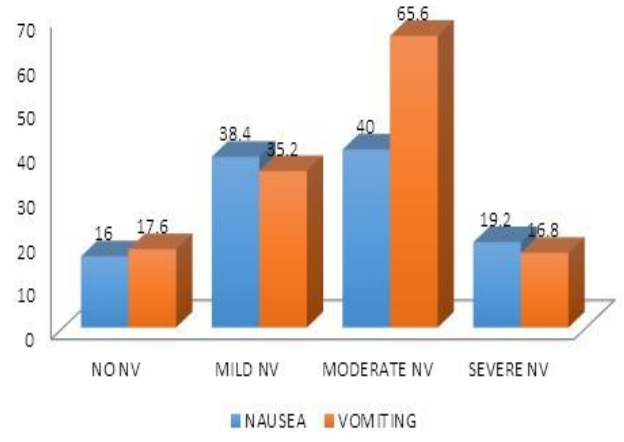


Fig 5: Diet distribution of participants

Fig 6: Frequency of food consumption

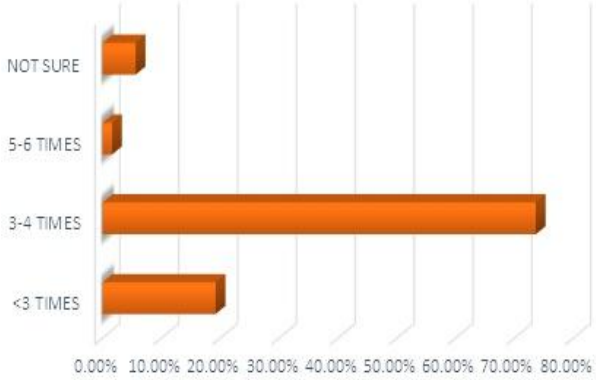
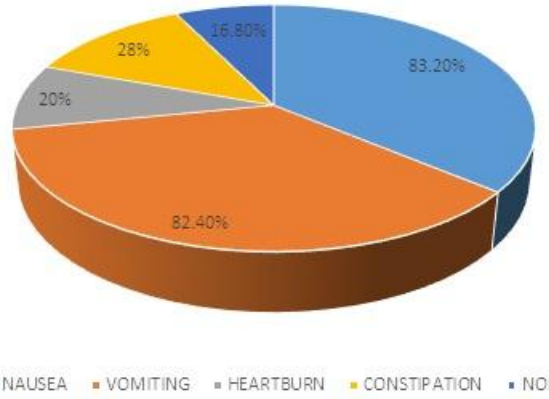


Fig 7: Distribution based on symptoms



CONCLUSION

In this Prospective Observational Study, it was concluded that the existence of NV negatively affects the QOL of pregnant women. In tis study it was observed that even though there was moderate to severe NV among women, the nutritional status during first trimester pregnancy was not severely affected.

The most remarkable factors for decreasing QOL were found to be nausea, vomiting, fatigue, poor appetite, pain, emotions and lack of knowledge. Decreased HRQOL was intensely related to daily presence of fatigue, nausea and vomiting.

Even though health was found to be good, the presence of nausea and vomiting has negatively affected the QOL. Therefore much emphasis must be given to these two parameters for improving the QOL during first trimester.

The impact of NVP on QOL of pregnant women must be taken into account by the healthcare professionals and appropriate clinical practice should be followed.[9]

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