CHAPTER V
DISCUSSION OF RESULTS

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DISCUSSION OF RESULTS

Introduction

There are several studies on anxiety and depression of pregnant women. The findings of the present study may be either related to or different from those studies. A discussion in this context is warranted to evaluate the relevance of the findings of the present study in the interface of other studies.

The analysis and results on the basis of objectives were presented in chapter IV. All the statistical calculations could find answers to the objectives of the study. The results obtained are discussed in relation to previous studies are presented in twelve sections.

5.1 Socio-personal Variables of Phase I

Among 500 pregnant women 356 were nulliparous pregnant women and 154 parous pregnant women and 64% of the women belonged to the Hindu religion. Majority of pregnant women (59.9%) belonged to the age group of 20-24 years and only 6.2 % of them were below 20 years of age. 61.6 % pregnant women were with high school education and only 7 % of samples with educational status of 1 to 7 standards. In terms of the occupation 81.6% pregnant women were housewives. Most of the (80 %) pregnant women belonged to nuclear family set up. Only 0.6% percent subjects get information from relatives and friends. Majority (51 %) of them was using television as the main source of information and the remaining 49.4 % sought information from various sources. Similar findings to the present study were found by Elizebeth (1998), Sunitha (1999), Maria 1999 and Rocemole (2007). They all conducted their study in the same geographical
area. Most of pregnant women did not have any family member with fear of pregnancy and any family history of mental disease (94%, 99.6% respectively).

**Marital relationship of Pregnant Women:** Most pregnant women (88%) were satisfied in their marital relationship and majority of them (86.6%) were satisfied with the care they received from their husbands. The above findings are in par with usual distribution of population.

**Support System:** Among sample 94% reported good family support. The study finding was supported by Lucy (2010) who reported 73% of study group had full support from either husband’s family or woman’s own family support along with husband’s support. The remaining 27% were with full support from their husband alone.

### 5.2 Prevalence of Anxiety during Trimesters of Pregnancy and Postnatal Period

**5.2.1. General Anxiety during Trimesters of Pregnancy and Postnatal Period**

In the present study the prevalence of general anxiety varied according to trimester of pregnancy. It was found that there was 48.4% prevalence of severe general anxiety among pregnant women during first trimester. During third trimester most of the pregnant women 71% (355), reported moderate general anxiety and 29% (145) had severe general anxiety. This confirms high prevalence of moderate to severe degree of general anxiety among pregnant women during third trimester. It was found that only 29.2% of subjects had severe general anxiety during postnatal period. Data further indicated that the mean general anxiety score during third trimester was high (106.89) compared to other trimesters, indicating that pregnant women were having high degree of general anxiety which comprises both Trait (M=50.64) and State Anxiety (M=56.25).
Findings of the present study agree with the earlier studies cited below. Rico, (2009) in Spain did analysis of the relationship between maternal anxieties in third trimester and pregnancy risk. Levels of both State Anxiety and Trait Anxiety were evaluated. Of the 174 participants in the study, 98 (56.3%) had low risk pregnancies with a mean of 32.8 points for State Anxiety and of 27.3 points for Trait Anxiety. Faisal. A (2006) who conducted a prospective study to estimate the prevalence and risk factors for antenatal anxiety and antenatal depression reported the prevalence of State and Trait Anxiety as 59.5 and 45.3 respectively. Trait Anxiety, as a personality trait was seen distributed equally in the population, regardless of experience of labour, so nulliparous and parous women did not differ in Trait Anxiety.

Zar .M, Wijma. (2001) reported fear of childbirth is related to anxiety in general which seems a trait component. Women with a high fear of childbirth have high general anxiety than those with a moderate or low level of fear of childbirth. Hall, et al. (2009) reported that higher levels of general anxiety predicted higher levels of childbirth fear among women.

5.2.2. Prevalence of Pregnancy-specific anxiety during Trimesters of Pregnancy and Postnatal Period

Pregnant women in their third trimester reported more pregnancy-specific anxiety. Prevalence of 77% moderate pregnancy-specific anxiety during the third trimester and 22% prevalence of severe pregnancy-specific anxiety were found. A 99% prevalence of pregnancy-specific anxiety during third trimester was observed, which is the highest. It is also evident that the mean score of third trimester PSA was high (126.90) compared to other trimesters. So the highest prevalence of pregnancy-specific anxiety was observed in third trimester. During first trimester (89.2%) pregnant women had moderate amount of

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pregnancy-specific anxiety with 8.4% prevalence of severe anxiety. Prevalence of 97.6% moderate to severe pregnancy-specific anxiety was observed during first trimester.

The study findings are consistent with findings of the following researchers. A study was conducted by Huizink, C. et al., (2004) using a 34-item questionnaire on pregnancy-related anxiety at 15–17, 27–28, and 37–38 weeks of gestation to test the structure and to examine the associations with general anxiety and depression among nulliparous pregnant women with a normal risk status (N=230). The study reported marked increase in pregnancy related anxiety concluded that pregnancy related anxiety should be regarded as a relatively distinctive syndrome.

Hall, et al, (2009) conducted cross-sectional descriptive survey in a community sample of six hundred and fifty English-speaking nulliparous and multiparous women of 17 to 46 years of age and between 35 and 39 weeks gestation, with uncomplicated pregnancies. They concluded that one fourth of women (25%) reported high childbirth fear. Fear of childbirth appears to be part of a complex picture of women's emotional experiences during pregnancy. Their findings supports the present study.

Fenwick, et al (2009) investigated pre- and postpartum levels of childbirth fear in a cohort of childbearing women and explored the relationship to birth outcomes. A prospective correlation design method was used among 401women. Twenty-six per cent of pregnant women reported high degree of fear. Other study of Wadhwa, et al. (1993) and Killingsworth (1997) also reported more pregnancy-specific anxiety than general anxiety. These studies are also consistent with findings of the present study.
5.2.3. Area-wise Pregnancy-specific anxiety during three Trimesters of Pregnancy and Postnatal period

a. Anxiety about Being Pregnant (ABP)

Among 500 pregnant women, 190 pregnant women during third trimester had severe anxiety about being pregnant. Also 305 pregnant women reported moderate anxiety in the third trimester. Totally 99% prevalence of moderate to severe anxiety related to being pregnant with a mean score of 53.94 during their third trimester was found, which is much higher than other trimesters. The result confirmed that anxiety related to being pregnant was high during third trimester.

b. Anxiety about Childbirth (ACB)

The present study findings showed that 465 (93%) pregnant women out of 500 were with severe childbirth anxiety in their third trimester with a high mean childbirth anxiety 38.70. This finding led to conclude that the childbirth anxiety was high in third trimester compared to other trimesters. It is interesting to notice that 42.4% prevalence of high childbirth anxiety during first trimester. Among the components of PSA prevalence of childbirth anxiety was highest among pregnant women during the third trimester as compared to other aspects of pregnancy-specific anxiety. Nulliparous women reported more childbirth anxiety than parous mothers. The findings of the present study agree to those of the study conducted by Fenwick et al. (2009); Hall, et al. (2009); Zar .M, Wijma. (2001); Erickson, 2006; Standley et al. (1979); Pınar and Hülya (2009) and Lekshmi (2002). They found out that women’s fears were related to labour pain, birth-related problems and procedures. The findings of the study shows that nulliparous women had a higher level of fear of childbirth than parous women.
c. **Anxiety about Breastfeeding (ABF)**

The findings of the present study showed 96.8% prevalence of mild to moderate levels of anxiety about breast feeding during their third trimester. Nulliparous pregnant women’s anxiety about breastfeeding seemed high (mean score 20.28) compared to parous pregnant women (mean score 16.29).

d. **Anxiety about Newborn Care (ANB)**

The present study showed that majority of pregnant women (472) reported mild to moderate anxiety about newborn care. In detailed analysis it was noted that first time pregnant women had more anxiety about newborn care (mean score was 16.8) compared to parous pregnant women (mean score of 12.7). Nulliparous pregnant women reported more anxiety about newborn care than parous pregnant women (16.8, 12.7 respectively).

### 5.3 Prevalence of Depression during Three Trimesters of Pregnancy and Postnatal Period

Incidence and prevalence rate of depression were reported to be associated with availability of social and family support which varies widely around the world. (Zekiye Karaçam and Gülsüm Ançel, 2005). The Systematic review by Bennett, et al., (2004) estimated the prevalence of depression during pregnancy by trimesters. The prevalence rates were found to be 7.4%, 12.8% and 12% for first, second, and third trimesters, respectively. A varied prevalence rate was reported from different parts of the world- (Kerry, Catherine and Marie, 2007). The prevalence of depression during pregnancy was 14.2% (Pereira, P.K; Lovisi, G.M; Pilowsky, D.L; 2009). The prevalence of depression was 15.5% in the third trimester of pregnancy among Maltese women (Felice et al., 2004). In a US study, depressive symptoms were found in 26% of low-income African-American
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pregnant women (Chung et al, 2004). These findings showed that the prevalence of prenatal depression may vary in women with different cultural backgrounds.

In the present study at first trimester moderate degree of depressive symptoms were reported among 11 (2.2%) pregnant women but during the third trimester 16 (3.2%) reported moderate degree of depressive symptoms. Twenty pregnant women (4%) had only moderate depression in the postnatal period which is the highest compared to pregnancy period.

In contrast to the previous reported prevalence rate a much lower prevalence of depression was found during pregnancy and postpartum period in the present study. Moreover this is in variance with high level of anxiety both general and pregnancy-specific anxiety reported by the subjects. We have observed that pregnant women had good family support during pregnancy and childbirth. Most of the couples (88%) were satisfied in marital relationship and the relationship with their in-laws. Our society accords high esteem to a woman when she becomes pregnant and there is possibly an improvement in the quality of marital relationship, intrafamily and interfamily interactions and an overall psychosocial wellbeing of the woman. These factors would have contributed to the low prevalence of depressive symptoms in our subjects.

The congenial family atmosphere on account of these factors would have created a less stressful environment for pregnant women and enabled them to adapt to pregnancy-related changes in a more smooth and effective manner and contributed to low incidence of depressive symptoms.

Previous studies by Beck & Tatano, (2001), Mani Chandran, Prathap Tharyan, (2002), Terhi Saisto et al., (2001), Zekiye Karaçam and Gulsüm Ançel (2005); Robertson,(2004); Felice, et al. (2004); revealed that poor marital relationship, lack of
support from partners, family members and less social supports are the predictors of depression in pregnancy and postpartum period. So the low prevalence of pre-postpartum depression in this study is actually due to strong social and family support in the Kerala culture as well as good relationship among couples.

5.4 Knowledge of Pregnant Women regarding Selected Aspects of Antenatal Care

With regard to knowledge of childbirth preparation only seven pregnant women (1.4%) had good knowledge and 105 (21%) pregnant women were with poor knowledge in this aspect.

Only 35 pregnant women (7%) had good knowledge regarding prevention of minor disorders. The mean percentage value showed only 52.85% scores in the area of knowledge regarding childbirth preparation and 55.67% scores in knowledge regarding prevention of minor disorders.

The above findings indicated that pregnant women had very little knowledge regarding preparation for childbirth. A similar finding was reported by Elizebeth (1998); Sunita (1999); and Lucy (2010). This finding confirmed the need for an organized childbirth education to all pregnant women. Detailed analysis found more negative correlations of pregnancy-specific anxiety with total score of nulliparous pregnant women’s knowledge regarding preparation for childbirth.

5.5 Association of STAI and PSAI with Knowledge

Both general anxiety levels and pregnancy-specific anxiety levels were negatively correlated with knowledge regarding antenatal care. All the correlation values were towards negative side indicating that decreased knowledge level caused increased anxiety.
Detailed analysis of pregnancy-specific anxiety revealed that 93.8% pregnant women had severe anxiety about childbirth during third trimester (maximum mean score 38.70). At the same time their knowledge regarding childbirth preparation was low (mean percentage 52.85%). A negative linear correlation of PSA in third trimester with total knowledge score (-0.09) and negative correlation (-0.10) between third trimester pregnancy-specific anxiety and knowledge regarding childbirth preparation statistically indicate that lack of proper knowledge regarding preparation for childbirth is the leading cause of high childbirth anxiety among pregnant women.

The Investigator did further detailed correlation of knowledge among nulliparous and parous pregnant women with their childbirth anxiety level, as nulliparous pregnant women’s childbirth anxiety levels were increased. More negative correlation was observed between nulliparous pregnant women’s knowledge regarding preparation for childbirth and childbirth anxiety. Lekshmi (2002) also reported the same findings. Other studies support the findings of the present study that is intense childbirth fear in nulliparous than in parous women. (Alehagen, Wijma, & Wijma, 2000; Wijma, So¨derquist, & Wijma, 1997).

The findings of the study established the importance of knowledge of childbirth in alleviating anxiety associated with pregnancy and childbirth and also the emphasis to provide childbirth education through an effective training module especially to first time pregnant women. The above results are supported by following authors. Childbirth education is a good way to alleviate fears associated with pregnancy and childbirth because it provides clients with an opportunity to extend their knowledge (Whitley, 1992). Childbirth Education by the nurses can alleviate many of the childbirth fears (Lowdermilk, 2007). In current practice emphasis is placed on getting expectant parents to attend childbirth preparation classes (US Department of Health and Human services 2000).
Sunitha (1999); Lekshmi (2002); Lucy 2010 all of them emphasized the importance of programmed childbirth education to enhance pregnant women’s knowledge regarding childbirth.

5.6 Association between BDI with Knowledge of Antenatal Care

There were no significant correlation found between depression scores of pregnant women and knowledge score.

5.7 Association between Socio-personal variables and levels of STAI, PSAI and BDI

Study conducted by Terhi Saisto (2001) examined the personal characteristics and socio-economic background of 278 women and their partners fearing vaginal childbirth in sixteen outpatient maternity centers in the capital area of Finland. Results revealed women with more anxiety, depression, low self-esteem, dissatisfaction with the partnership, and lack of social support reported more pregnancy-related anxiety and fear of vaginal delivery. Lack of support contributed most to the prediction of severe fear of vaginal delivery, the strongest predictor being dissatisfaction with the partnership and also dissatisfaction with the partnership contributed to the woman's fear of vaginal delivery.

Mani Chandran, Prathap Tharyan, (2002) explored post-partum depression in a cohort of women from a rural area of Tamil Nadu among 359 women, India incidence and risk factors for developing post-partum depression determined. Low income, birth of a daughter when a son was desired, relationship difficulties with mother-in-law and parents, adverse life events during pregnancy and lack of physical help were reported as risk factors for the onset of post-partum depression. Robertson,(2004); Felice,et al.(2004); Zeikiy (2005) revealed that poor marital relationship, lack of support from partners, family
members and less social supports are the predictors of anxiety and depression in pregnancy and postpartum period.

The present study findings revealed that gravidity and parity as an influencing factor for high prevalence of pregnancy-specific anxiety. Detailed analysis of each trimester pregnancy-specific anxiety with gravidity of pregnant women found that first time pregnant women had high third trimester pregnancy-specific anxiety score of 131.4 as compared to parous pregnant women scores 116.80, and these values are significantly varied according to GLM test(0.001). Section-wise analysis of pregnancy-specific anxiety with gravidity of pregnant women revealed that nulliparous pregnant women had higher mean score (39.26) for childbirth anxiety than of parous pregnant women mean 37.44. These values were statistically varied significantly according to GLM test. This observation justifies the selection of third trimester nulliparous pregnant women for the second phase intervention study. The study findings agrees with studies Zar .M, Wijma. (2001)

Other socio-personal variables were having only association in some aspects of anxiety and no specific pattern observed between each socio-personal variables with anxiety and depression.

The studies described above contradicted with the present study findings as strong family support and satisfied marital relationship and good relationship with family were reported by pregnant women. Moreover the strong family tie up and support during the pregnancy in Kerala culture may have contributed to this result.
5.8 Association between Socio-personal variables and Knowledge of Five aspects of Antenatal Care

1. Knowledge regarding Pregnancy Diet and Socio-personal Variables

No significant relationship has been found between the pregnant women’s knowledge on diet and any of the socio-personal variables. Many studies conducted on dietary knowledge of pregnant women support the findings and 93% of sample had education above seventh standard. Dietary knowledge from magazines and mass media such as TV are widespread among women in Kerala.

2. Knowledge regarding Antenatal Check up and Socio-personal Variables

It was evident that all socio-personal variables were insignificantly related to pregnant women’s knowledge regarding antenatal check up except type of family. A 0.05 level significance was found in relation to the mother’s type of family and pregnant women’s knowledge regarding antenatal check up. As we have observed that 400 (80%) pregnant women belonged to nuclear family, where there was no chance of sharing information and transfer of knowledge from immediate relatives, which is one of the common means of knowledge transfer within the family. This may be the reason for the significant observation related to type of family.


There was no significant association between mother’s knowledge regarding prevention of minor disorders of pregnancy and any of the socio-personal variables.
4. Knowledge regarding Breastfeeding and Socio-Personal Variables

Chi Square test result values revealed no significant relationship between the pregnant women’s knowledge regarding breast feeding and socio-personal variables except the type of family.

5. Knowledge regarding Childbirth Preparation and Socio-personal Variables

A significant association between the knowledge of pregnant women regarding preparation for childbirth and some of the socio-personal variable such as pregnant women’s gravidity, occupation, type of family, history of abortion and history of family members with fear of pregnancy has been noted. This finding confirmed that pregnant women need to know more about preparation for childbirth. Nulliparous pregnant women seem to be more vulnerable and therefore should be the primary focus group (69.2 % pregnant women were of nulliparous in the study population). Since small family norm prevails in our Nation, the majority of pregnant women group at any given point would be nulliparous, this is especially so in Kerala, where small family norm is more accepted and established. 81.6% pregnant women belonged to the category of housewife and their exposure to information sources are less. The effects of nuclear family added to nulliparous pregnant women’s knowledge deficit regarding childbirth preparation. These findings confirmed that there should be an organized and formal childbirth education program available for pregnant women, especially to nulliparous ones. Study conducted by Lekshmi (2002) supports the current findings

6. Total Knowledge of Five aspects of Antenatal Care and Socio-personal Variables.

It is found that total knowledge of pregnant women regarding five selected aspects of antenatal care had significant association at 0.05 levels with mother’s gravidity,
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occupation, type of family, history of abortion and history of family members with fear of pregnancy. These results confirmed the need for formal planned childbirth education programmes to pregnant women.

5.9 Association between Pregnancy-Specific Anxiety and Outcomes of Labour

Laura, Glynn, et.al. (2008) assessed Pattern of Perceived Stress and Anxiety in Pregnancy Predicted Preterm Birth among in 415 pregnant women at 18–20 and 30–32 weeks' gestation. The data proved the patterns of anxiety and stress was associated with gestational length. The finding of the study revealed that those who delivered preterm exhibited increased stress and anxiety though majority of women who delivered at term exhibited decline in stress and anxiety. Author concluded that an increase in stress or anxiety among pregnant women is an important predictor of preterm birth.

Dayan, (2002) conducted a cohort study on Role of Anxiety and Depression in the Onset of Spontaneous Preterm Labor in France in 1997–1998. He investigated the effects of antenatal anxiety and depression on spontaneous preterm labor. A consecutive series of anxiety and depression were assessed among a consecutive series of 634 subjects of pregnant women with singleton pregnancies using self-administered questionnaires Spielberger's State-Trait Anxiety Inventory and the Edinburgh Depression Scale. Findings showed that anxiety and depression, when combined with specific biomedical factors, are associated with spontaneous preterm labor.

Laursen, (2009) examined fear of childbirth and risk for birth complications in nulliparous women in the Danish National Birth Cohort. He found that fear of childbirth in early (16 weeks) and late (31 weeks) pregnancy was associated with emergency caesarean
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He concluded that fear of childbirth during pregnancy was associated with dystocia and emergency caesarean section.

Fenwick, et al (2009) investigated pre- and postpartum levels of childbirth fear in a cohort of childbearing women and explored the relationship to birth outcomes. A prospective correlation design method used among 401 women. The analysis revealed that high antenatal fear was associated with emergency caesarean delivery (n = 324).

Saisto, (1999) identified factors associated with fear of childbirth during and after first labor among 100 primiparas who reported severe fear of vaginal childbirth. Results showed prevalence of emergency caesarean and vacuum extraction and prolonged labour.

The present study findings are consistent with the above mentioned study results. They are as follows

Duration of labour: There were total of 132 pregnant women with moderate to severe anxiety went into prolonged labour and 30 pregnant women had abnormal /operative deliveries and all of them were with moderate to severe anxiety. Chi-square value (0.001) indicated that anxiety levels of pregnant women significantly influenced the duration of labour.

Types of delivery: The data revealed that only 38.4% pregnant women with moderate to severe anxiety had spontaneous vaginal delivery, 34.2% had induced labour. 104 (20.8%) pregnant women ended up with vacuum and forceps delivery and 30 (6%) pregnant women underwent caesarean section.

Reasons for assisted deliveries: Among 94 pregnant women who had assisted labour and delivery, failure of maternal power was the reason for 40 (44.45%) pregnant women.

Caesarean planned: Out of 30 caesarean sections 28 were unplanned. Twelve were done at maternal request. Chi-square value (0.001) indicated that pregnant women with moderate to severe pregnancy-specific anxiety were requesting for caesarean delivery. This
signifies the importance of planned childbirth education during third trimester to reduce childbirth anxiety. There is a lot of concern about high percentage of caesarean sections in the current obstetrical services. A part of the higher number of caesarean sections may be related to high maternal anxiety. The findings of the present study regarding labour outcomes from records are mostly in agreement with studies cited above.

**Weeks of Gestational:** 98 (19.8%) pregnant women with moderate to severe pregnancy-specific anxiety babies were born before 37 weeks. Chi-square value 0.009 indicates this is statistically significant.

**Age at birth by size and baby birth weight:** Chi-square value computed was (0.028) for both of these variables and found significantly associated with pregnancy-specific anxiety pregnant women. In fact these results emphasis the importance of planned childbirth education to pregnant women during their third trimester.

### 5.10 Effect of Planned Childbirth Education on Pregnancy-Specific Anxiety among Nulliparous Pregnant Women

GLM test showed a high statistically significant value (p<0.001) which indicated that childbirth education markedly influenced in decreasing pregnancy-specific anxiety. In repeated measures of test for each section of pregnancy-specific anxiety also proved the same result (p<0.001) indicating the positive impact of childbirth education on reducing all aspects of pregnancy-specific anxiety. This proved that planned childbirth education is effective in reducing pregnancy-specific anxiety among nulliparous pregnant women. The present study is supported by previous studies.

Bastani, et al (2005 ) conducted a Randomized controlled trail of the effect of applied relaxation training on reducing anxiety and perceived stress in first time pregnant women and suggested beneficial effects of relaxation on reducing anxiety and perceived stress in
pregnant women. They recommended that teaching relaxation techniques could serve well in improving maternal psychological health.

Tang and Goggins (2009) conducted a randomized controlled trial to test the effectiveness of enhancing educational intervention to promote women’s self-efficacy for childbirth and coping ability in reducing anxiety and pain during labour. The experimental group demonstrated higher levels of self-efficacy for childbirth than control group (p<0.001), lower perceived anxiety (p<0.001) and greater performance of coping behaviour during labour (p<0.001). The study found that educational intervention was effective in promoting women’s self-efficacy for childbirth and reducing their perceived pain and anxiety in the first two stages of labour.

Lekshmi (2002) conducted a study to find out the effectiveness of Planned Childbirth education on Anxiety and Knowledge of primigravid women (n=60). The study concluded that significant reduction in childbirth anxiety score of experimental group after planned childbirth education compared to control group (p<0.001). The planned childbirth education was proved to be effective in reducing the childbirth anxiety.

A study by Lee and Holroyd (2009) in China highlighted the importance of cultivating positive coping measures among women through childbirth education class when they are facing with childbirth anxiety. Saiso, (2000), Hodnett, et al., (2002) reported that classes given in late pregnancy must emphasize labour and birth. They recommended that Nurses can play an important role in helping the women to achieve a satisfying birth experience by providing honest understandable answers to their queries especially through structured childbirth education.

Our results also indicated that structured childbirth education programmes help in reducing pregnancy specific fears in pregnant women especially in nulliparous women.
5.11 Effectiveness of Planned Childbirth Education on the Acquisition of Knowledge regarding Five Selected Aspects of Antenatal Care among Nulliparous Pregnant Women

Comparison data of knowledge regarding antenatal care in control and experimental group revealed that experimental group scored higher knowledge in all five aspects of antenatal care, especially in the area of preparation of labour (Mean = 54.30) and in the total knowledge regarding antenatal care (Mean = 149.66). The p-values (p<0.001) confirmed that childbirth education was effective to improve the knowledge regarding antenatal care. Wide range of pre and posttest scores of preparation for childbirth in experimental group indicates that childbirth education program was effective to impart knowledge regarding preparation for labour. The t and p value (26.70, P<0.001) statistically proved that the mean gain in knowledge regarding preparation for childbirth of intervention group compared to control group is due to the impact of planned childbirth education, similarly all other aspects including total knowledge aspect were also statistically significant at 0.001 level. So, the effectiveness of planned childbirth education on the acquisition of knowledge regarding selected five aspects of antenatal care among nulliparous pregnant women was proved. Marked gain in childbirth knowledge among nulliparous pregnant mothers is a notable finding. The present study proved that childbirth education program increases nulliparous women’s knowledge regarding antenatal care especially in the area of preparation for labour and delivery.

Self-care is important throughout life, but especially during pregnancy for the benefit of mother and infant. Nurses have the opportunity to encourage healthy stress management and health-promoting lifestyle. The relationship between maternal perceived stress and
health promoting behaviors in third trimester of high risk pregnancy reveals that women with higher levels of perceived stress had fewer health promoting behaviors.

Lekshmi (2002) conducted a study to find out the effectiveness of Planned Childbirth Education on Anxiety and Knowledge of Primigravid Women (n=60) reported that knowledge of primigravid women on childbirth was low. Reported negative correlation between childbirth anxiety and knowledge. There were significant improvement in the knowledge score of experimental group after planned childbirth education (p<0.001). The study concluded that planned childbirth education was effective in improving the primigravid women’s knowledge on childbirth.

Eva, Noronha and Sonia (2010), determined the effectiveness of childbirth class in terms of behavioral responses during first stage of labour and labour outcome of 60 primigravid women in selected hospitals of Udupi district, Karnataka-India. Statistically significant differences between the groups were reported in behavioral responses in first stage of labour, nature of delivery and neonatal outcomes. Practice of breathing exercise, relaxation technique and added knowledge of childbirth shortened the duration of labour in experimental group.

They concluded that childbirth classes prepared primigravid women for the process of labour and conditioned them to relax and cope with labour pain. Other studies by Sunitha (1999) and Elizebeth (1998) also support the findings of the present study.

5.12 Comparison of Labour Outcomes in Control and Experimental Group

Nieminen, Stephansson.Ryding, (2009) investigated Swedish women's level of antenatal fear of childbirth at various gestational ages, and factors associated with intense
fear and with preference for cesarean section. The study reported prevalence of intense fear of childbirth was 15.8% and very intense fear 5.7%. Nulliparous women had a higher mean score than parous women. Preference for cesarean section was associated with fear of childbirth for nulliparous, an instrumental vaginal delivery. This finding is consistent with present study findings as incidence of cesarean section reduced to 12% in experimental group compared to 24% in control group.

Another noted finding was only 6% pregnant women in experimental group requested for cesarean section compared to 16% in control group. This reduction from 16% to 6% in experimental group indicated that pregnant women were not very anxious and they had self control. These changes in values are attributed to childbirth education programme which raised the knowledge of pregnant women on childbirth. The reduction of 50% abnormal or operative deliveries in experimental group also agrees with findings of Eva, Noronha and Sonia (2010).

5.13 Distribution of Postnatal Depression Scores in Control and Experimental Groups.

Though the overall incidence of postnatal depression is low, Experimental group’s mean depression score was reduced to (9.72) as compared to mean depression score (11.16) of the control group. The mean score reduction was statistically significant (p<0.001) as per independent ‘t’ test. Though the prevalence of depression itself is low, the reduction in mean score could be due to the beneficial effect of childbirth education.