Pregnancy is a normal developmental period requiring physiological and psychological adaptation by the new mother. This period involves upheavals in emotions, relationships, values, and roles which demand special consideration. Psycho-dynamically, first pregnancy can be a welcoming event and viewed as a means of self-realization, to diminish self-doubts about femininity or to reassure that they can function as women in the basic sense. Still, others view pregnancy negatively, where they may fear childbirth or feel inadequate to be a mother.[1]

Pregnancy is a time of growth, excitement, and hope, but it is also a time when woman is vulnerable to develop various mental health problems. The greater vulnerability of women can be owing to biological, psychological changes as well as social factors such as poverty, economic dependency, sexual abuse, stress, intimate partner violence, and so on.

**ABSTRACT**

**Background and Aims:** Pregnancy is a developmental period demanding special adjustments. Psychologically, pregnancy can be associated with positive preparedness in some and fear of childbirth or doubts of mothering role in others. Anxiety and depression during pregnancy can have negative implications on its outcome. The current study aims to provide insight into factors influencing maternal preparedness for motherhood. **Methodology:** Hundred first time pregnant women were enrolled after written informed consent and ethical approval. The Pregnancy Experiences Scale-Brief Version was used to study maternal rating of uplifts and hassles experiences specific to pregnancy, indicating affective valence toward the pregnancy. Pregnancy-Related Anxiety Questionnaire (PRAQ-R) helped to identify pregnancy-specific anxiety and depressive symptoms were screened using Whooley’s Questions. Data were analyzed using Microsoft Excel 15.30 (170107). **Results:** The mean age of the women was 23.1 years. More than half of the pregnancies were unplanned, and the mean duration of pregnancy was 6.8 months. The positive experience was reported more than a negative experience. Negative valence increased in the presence of psychosocial stressors. On PRAQ-R, anxiety symptoms were reported by 52% of the patients, especially high on the domain of “fear of giving birth” and increased with trimester. Depressive symptoms were reported by 23% of the women. **Conclusion:** Advanced gestation, presence of stressors, past psychiatric illness, ANC complications, and the presence of anxiety/depression influence maternal preparedness for motherhood. There is a need of sensitizing the doctors, nurses, health-care workers, and relatives regarding screening, referral of unmet psychological needs of pregnant women to help new mothers to adjust with their motherhood positively.

**Keywords:** Anxiety, depression, maternal preparedness, pregnancy

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It is observed that at least one in ten mothers in all strata of society, experience clinical depression and/or anxiety before and up to a year after childbirth. Mental health during pregnancy and postpartum deserves special attention as untreated maternal mental health problems can result in serious consequences in both the mother and the child. They include pregnancy complications, prematurity, low birth weight or intrauterine growth retardation, fetal or neonatal distress, and developmental delay.

In contrast, mothers with a positive adjustment with pregnancy tend to go through better outcomes and bonding with baby in postpartum, various mechanisms mediating the effects of maternal psychopathology on the fetus include increased release of catecholamines, overstimulation of maternal and fetal hypothalamic-pituitary-adrenal axis, reduced uterine, and cerebral blood flow.

Pregnancy-specific anxiety is relatively common, affecting 12%–20% of women. Pregnancy anxiety appears to be a unique syndrome reflecting fears about the health and well-being of self and one’s baby, of the hospital and of impending childbirth, and of parenting or the maternal role.

Depression is the most prevalent psychiatric disorder during pregnancy. Several studies across the world have documented the prevalence of antenatal depression ranging from 9% to 38% with a point prevalence of 15.5% in early and mid-pregnancy, 11.1% in the 3rd trimester, and 8.7% in the postpartum period. Both anxiety and depression in pregnancy are associated with postnatal depression and poor mother–infant bonding postpartum.

There is insufficient evidence studying factors affecting mental preparedness in young pregnant women. A review of the various factors influencing maternal preparedness, such as anxiety, depression, and socioeconomic and interpersonal problems, would provide an insight into how education and psychological support should be instilled into the antenatal care of the young mothers.

The current study was undertaken with the aim of assessing the antenatal preparedness in first-time mothers, and to study the association between antenatal preparedness and various sociodemographic, pregnancy-related variables, presence of psychosocial risk factors and anxiety and depression among these women.

Materials
1. Self-designed semi-structured proforma to study sociodemographic details of the pregnant women
2. Pregnancy Experiences Scale-Brief Version (PES-Brief). This scale is a shortened version of the pregnancy experiences scale (PES), a measure of maternal exposures to daily, ongoing uplifts and hassles specific to pregnancy. The PES-brief includes the ten most frequently endorsed uplifts and ten most frequently endorsed hassles, each rated from 0 (not at all) to 3 (a great deal). Each item in the PES-Brief is rated along only one dimension (i.e., as either a hassle or an uplift). Scoring yields six scores. These are the frequency of hassles and the frequency of uplifts, calculated by counting the number of items that are endorsed with values >0; the intensity of hassles and the intensity of uplifts, calculated as the sum of scale scores (1–3) divided by hassles or uplifts frequency; and two hassles: Uplifts ratio scores computed by dividing hassles frequency scores by uplifts frequency scores and dividing hassles intensity scores by uplifts intensity scores. These ratio scores were implemented to measure the affective valence towards the pregnancy.

3. Pregnancy-Related Anxiety Questionnaire-Revised (PRAQ): The 10-item PRAQ-R is a widely used instrument to assess and identify pregnancy-specific anxiety in nulliparous women. It has good psychometric values and predictive validity for birth and childhood outcomes. It contains ten items representing anxiety related to three factors: Fear of giving birth, fear of bearing a physically or mentally disabled child, and concern about one’s own appearance. Item responses are on a 4-point scale, ranging from “definitely true” to “definitely not true.” Good internal reliability of the subscales, as well as the total score, was found. The items are summed up to get total scores ranging from 10 to 40 for nulliparous women. Higher scores reflect higher levels of pregnancy-related anxiety. A dichotomous cut-off score of 26 and higher was chosen for nulliparous women.

4. Whooley’s Questions: The Whooley questions were introduced by the National Institute for Clinical Excellence 2007 when they reviewed their guidelines for Antenatal and Postnatal Mental Health. The two-item Whooley questions have high sensitivity and modest specificity in the detection of depression.

The questions are as follows:
1. During the last month, have you often been bothered by feeling down, depressed or hopeless? (YES/NO)
2. During the last month, have you often been bothered by little interest or pleasure in doing things? (YES/NO)

YES to one or both questions is can be taken as a positive screen for depression.
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METHODOLOGY

It was a cross-sectional, observational study conducted at the obstetrics and gynecology out-patient department of a tertiary care general teaching hospital located in a rural India. The sample size was calculated using Open Epi Version 3.01, available in open source web-tool, using a 95% confidence level and absolute precision of 8% with the prevalence of depression among pregnant women reported to be 20%. The estimated sample size was 97.

One hundred first time pregnant women giving informed consent were enrolled by simple random sampling after obtaining institutional ethical committee approval and informed consent. Those with preexisting psychiatric illness and having severe medical or gynecological problems and requiring inpatient care were excluded from the study.

Sociodemographic details, pregnancy-related information, and details of psychosocial stressors were collected using pre-validated semi-structured proforma. Pregnancy preparedness was assessed using PES. Pregnancy-related anxiety was evaluated using PRAQ and depression was assessed by applying Whooley’s questions.

Data were entered in Microsoft Excel 15.30 (170107) and subjected to analysis using open domain software. Frequency, percentage, mean, and standard deviation were used to summarize the data. Unpaired t-test and Mann–Whitney test were used as a test of significance at 5% level of significance.

RESULTS

Total 100 first time pregnant women, irrespective of their trimester, were evaluated in the current study for their antenatal preparedness. Positive experience with pregnancy was reported by the participants. This is evident through the findings that the frequency and intensity scores of uplift items were more than the hassle scores. Furthermore, the hassle to the uplift frequency and intensity ratio was <1 [Table 1].

As shown in Table 2, the mean age of the women was 23.1 years. Nearly half of women had secondary education and married for less than a year, the majority of them were housewives and belonged to lower socioeconomic class.

High hassle frequency and significant negative valence were associated with lower socioeconomic status. Upliftment was more than hassles in a shorter duration of the marriage. However, the correlation of pregnancy experience with education, and marriage duration was not statistically significant. The hassle scores were significantly higher in patients who were employed than those who were housewives.

The uplift intensity scores were significantly higher in patients with unplanned pregnancy. The ratio intensity score increased with advances gestation, reflecting increased negative valence toward term pregnancy. However, these findings were not significant. The hassle frequency was observed to be significantly higher in patients with h/o Ante Natal Care (ANC) complications [Table 3].

Table 4 shows the association of pregnancy experience with psychological risk factors. The uplift scores were significantly low and the hassle scores were significantly high in patients with a past history of psychiatric illness and the presence of psychosocial stressors. Patients with psycho-social stressors reported significant negative valence toward pregnancy as indicated by ration scores of frequency and intensity to be more than one.

On PRAQ-R, anxiety symptoms were reported by 52% of the patients. Table 5 shows the influence of pregnancy-specific anxiety on pregnancy experience. The Hassle score was significantly higher in patients with pregnancy-related anxiety, and the uplift scores were significantly less in patients with no anxiety. Significantly higher frequency and intensity ratio scores in patients with anxiety indicated negative valence in them toward pregnancy.

The scores on PES were observed to be comparable in patients with depressive symptoms and those who did not report depressive symptoms on Whooley’s questionnaire. The association between pregnancy experience with depression was found to be statistically nonsignificant [Table 6].

DISCUSSION

Pregnancy is a unique social and biological event in a woman’s life, which may pose specific vulnerabilities. In addition, various sociodemographic, pregnancy-related factors, and psycho-social factors may influence the attitude of pregnant women towards childbirth and motherhood.

Table 1: Pregnancy experience on pregnancy experience scale - brief scale

| PES scores       | Minimum | Maximum | Mean±SD     |
|------------------|---------|---------|-------------|
| PES U frequency  | 6       | 10      | 8.73±1.317  |
| PES H frequency  | 1       | 10      | 5.38±2.992  |
| PES U intensity  | 1       | 3       | 2.34±10.51  |
| PES H intensity  | 1       | 3       | 1.81±10.47  |
| H/U ratio (frequency) | 0.1 | 1.5      | 0.78±0.36   |
| H/U ratio (intensity) | 0.3 | 1.8      | 0.81±0.266  |

PES – Pregnancy experience scale; SD – Standard deviation
Table 2: Association of pregnancy experience with sociodemographic factors

| Sociodemographic domain | Uplift frequency | Hassle frequency | Uplift intensity | Hassle intensity | H/U frequency | H/U intensity |
|-------------------------|------------------|-----------------|-----------------|-----------------|--------------|--------------|
| Education               |                  |                 |                 |                 |              |              |
| Less than primary (2%)  | 8.73 (1.28)      | 6.35 (3.09)     | 2.36 (0.51)     | 1.69 (0.52)     | 0.75 (0.39)  | 0.75 (0.26)  |
| Secondary (45%)         | 8.82 (1.219)     | 7.18 (3.00)     | 2.33 (0.51)     | 1.82 (0.33)     | 0.82 (0.35)  | 0.81 (0.25)  |
| Higher secondary (27%)  | 8.67 (1.42)      | 6.63 (3.60)     | 2.36 (0.53)     | 1.86 (0.50)     | 0.77 (0.35)  | 0.82 (0.27)  |
| Graduation (26%)        | 8.67 (1.52)      | 7.00 (2.64)     | 1.93 (1.01)     | 2.12 (0.5)      | 0.80 (0.26)  | 1.06 (0.22)  |
| Occupation              |                  |                 |                 |                 |              |              |
| Employed (58%)          | 9.00 (0.816)     | 8.29* (2.36)    | 2.02 (0.57)     | 1.67 (0.427)    | 0.93 (0.284) | 0.88 (0.30)  |
| Housewife (82%)         | 8.71 (1.34)      | 6.60 (3.01)     | 2.37 (0.50)     | 1.82 (0.475)    | 0.77 (0.364) | 0.805 (0.264) |
| Married since           |                  |                 |                 |                 |              |              |
| Less than a year (50%)  | 8.76 (1.30)      | 6.74 (3.15)     | 2.27 (0.57)     | 1.83 (0.45)     | 0.78 (0.37)  | 0.85 (0.29)  |
| 1-5 years (46%)         | 8.78 (1.29)      | 6.52 (2.88)     | 2.44 (0.43)     | 1.76 (0.47)     | 0.77 (0.33)  | 0.74 (0.22)  |
| >5 years (4%)           | 7.75 (1.70)      | 8.75 (1.25)     | 2.46 (0.43)     | 2.30 (0.41)     | 1.18 (0.34)  | 0.93 (0.09)  |
| Socioeconomic status    |                  |                 |                 |                 |              |              |
| Middle and upper (40%)  | 8.74 (1.40)      | 6.00 (3.12)     | 2.22 (0.48)     | 1.81 (0.48)     | 0.70 (0.37)  | 0.78 (0.28)  |
| Lower (60%)             | 8.73 (1.39)      | 7.80* (2.44)    | 2.42* (0.50)    | 1.81 (0.46)     | 0.91* (0.30) | 0.84 (0.22)  |

*Statistical significance present by Mann–Whitney U-test at P<0.05.

Table 3: Association of pregnancy experience with pregnancy-related variables

| Risk factor             | Uplift frequency | Hassle frequency | Uplift intensity | Hassle intensity | H/U frequency | H/U intensity |
|-------------------------|------------------|-----------------|-----------------|-----------------|--------------|--------------|
| Pregnancy planning      |                  |                 |                 |                 |              |              |
| Yes (43%)               | 8.62 (1.25)      | 7.03 (2.97)     | 2.26 (0.52)     | 1.73 (0.43)     | 0.81 (0.33)  | 0.80 (0.27)  |
| No (58%)                | 8.88 (1.40)      | 6.09 (2.99)     | 2.45* (0.47)    | 2.03 (0.50)     | 0.74 (0.39)  | 0.82 (0.25)  |
| ANC trimester           |                  |                 |                 |                 |              |              |
| I (14%)                 | 8.43 (1.50)      | 6.79 (2.86)     | 2.32 (0.62)     | 2.01 (0.49)     | 0.79 (0.28)  | 0.77 (0.41)  |
| II (15%)                | 8.93 (1.48)      | 7.09 (3.00)     | 2.30 (0.44)     | 1.84 (0.48)     | 0.80 (0.36)  | 0.83 (0.26)  |
| III (71%)               | 8.75 (1.25)      | 6.65 (3.05)     | 2.35 (0.50)     | 1.77 (0.46)     | 0.78 (0.37)  | 0.98 (0.22)  |
| ANC complication         |                  |                 |                 |                 |              |              |
| Yes (7%)                | 9.0 (0.816)      | 8.29* (2.36)    | 2.02 (0.57)     | 1.67 (0.427)    | 0.93 (0.284) | 0.88 (0.30)  |
| Nil (93%)               | 8.73 (1.34)      | 6.60 (3.01)     | 2.37 (0.50)     | 1.82 (0.475)    | 0.77 (0.364) | 0.805 (0.264) |

*Statistical significance present by Mann–Whitney U-test at P<0.05; ANC – Ante Natal Care.

Table 4: Association of pregnancy experience with psychological risk factors

| Psychological risk factors | Uplift frequency | Hassle frequency | Uplift intensity | Hassle intensity | H/U frequency | H/U intensity |
|----------------------------|------------------|-----------------|-----------------|-----------------|--------------|--------------|
| Past history of psychiatric illness |                  |                 |                 |                 |              |              |
| Yes (5%)                   | 10 (0.00)        | 4.20* (1.643)   | 2.64 (0.313)    | 1.84 (0.54)     | 0.42 (0.16)  | 0.71 (0.26)  |
| Nil (95%)                  | 8.66 (1.38)      | 6.85 (2.933)    | 2.33 (0.516)    | 1.81 (0.47)     | 0.80 (0.35)  | 0.81 (0.26)  |
| Psycho-social stressors    |                  |                 |                 |                 |              |              |
| Yes (7%)                   | 8.71 (0.95)      | 9.00* (1.73)    | 1.72* (0.527)   | 1.77 (0.519)    | 1.034* (0.186) | 1.079* (0.377) |
| Nil (93%)                  | 8.73 (1.34)      | 6.55 (3.00)     | 2.39 (0.48)     | 1.82 (0.471)    | 0.76 (0.36)  | 0.79 (0.247)  |

*Statistical significance present by Mann–Whitney U-test at P<0.05.

There is ample research focused on diagnosable anxiety and depression in pregnancy, but the studies on pregnancy experience and preparedness are missing. The intensity of the existing socio stressors can get exacerbated during pregnancy, especially in developing countries, where women face great inequalities in terms of work assignment, health priority, and financial stability and employment opportunities.

High hassle intensity and significant negative valence were associated with lower socioeconomic status. Upliftment was more than hassles in a shorter duration of marriage. The hassle scores were significantly higher in patients who were employed than those who were housewives. Pregnancy and childbirth can be viewed with anticipated financial burden by the expecting mother and can lead to negative valence to motherhood.

Various studies highlight the influence of the socio-demographic factors on depression, which include poor social support, marital conflict, adverse life events, and low maternal education. Poverty is a powerful predictor of major depression, with incidence rates two to three...
In contrast, another study observed that those pregnant women having unplanned pregnancy were nearly three times at higher odds to develop mental health problems like depression as compared to pregnant women whose pregnancy was planned. In India, most of the pregnancies are unplanned, and as the culturally accepted belief of “pregnancy as a symbol of a successful marriage,” early conception can create more uplift than hassle.

The ratio intensity score increased with advanced gestation, reflecting increased negative valence toward term pregnancy. Studies highlight that anxiety and depression symptoms are particularly high during the 1st trimester and 3rd trimester as compared to second.[21]

During the first pregnancy, the stress can arise due to the novelty of the situation. Besides the physical changes characterizing the pregnancy period, the anxiety about the delivery and the uncertainties about after-delivery management can contribute a lot to the occurrence of concerns, anxiety, and stress symptoms during the term period.[22,23]

The hassle frequency was observed to be significantly higher in patients with a history of ANC complications. The presence of negative antenatal outcomes may create more worries and concerns, leading to the perception of hassles more than the pregnancy uplifts.

In addition to “motherhood” as anticipated stress, other psycho-social stressful events not specifically related to pregnancy and the infant’s birth, when present during that period, can also affect women’s mental health. Studies highlights that assessment of stressful life events can also be a promising strategy, as the experience of stress in pregnant and postpartum women with mental health problems can be more intense, causing great suffering and having more severe implications for the antenatal mother-baby bonding.[24]

In our study, 52% of the patients expressed pregnancy-specific anxiety on PRAQ-R. In accordance with these findings, a recent study by Lee et al. reported that 54% of the women had antenatal anxiety during at least one trimester.[21]

Our study observed that patients with anxiety had significantly high hassle scores and significant negative valence for motherhood in them. Pregnant women can worry about the upcoming labor and anticipated pain, also referred to as fear of childbirth, or they may be concerned about the health of the child they are carrying or the physical changes they experience.[25]
Moreover, it has been shown in previous studies that pregnancy anxiety assessed with the PRAQ-R reflects a specific construct that can be differentiated from general anxiety for the most part. The presence of such anxiety can influence women’s perception of pregnancy.

Similar findings were observed in a study for validation of PES, and it was observed that the pregnancy anxiety scores were significantly related to hassles frequency, intensity, and both frequency and intensity ratios. The anxiety scores were unrelated to uplifts intensity or frequency. The scores on PES were observed to be comparable in patients with depressive symptoms and those who didn’t report them on Whooley’s questionnaire. In contrast, a study by DiPietro et al. highlights that the depressive symptoms scores were significantly related to hassles frequency, intensity, and both frequency and intensity but unrelated to uplift scores. The difference can be explained by the fact that the studies used different instruments to measure depressive symptoms during pregnancy.

CONCLUSION

Overall, the patients had positive valence towards pregnancy. The present data highlight that for first-time mothers, various sociodemographic factors such as low socioeconomic status, lower education, being employed, advanced gestation along with risk factors like antenatal complications, presence of psychosocial stressors can negatively influence the pregnancy experience. The presence of pregnancy-specific anxiety significantly impairs birth preparedness.

Limitations of the study

This study has certain limitations. First, the sample size was relatively small, and participants being from only one institution, the observations might not truly represent the characteristics of pregnant women in a large community. Second, being a hospital-based study; bias may occur in the selection of the study population.

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Conflicts of interest

There are no conflicts of interest.

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