CHAPTER – VI
DISCUSSION
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Life events like change in financial state, dismissal from work, change in eating or sleeping habits, divorce, death of spouse, marital separation, pregnancy, marriage, marital reconciliation, imprisonment etc. are the causes of chronic stress\(^1\)\(^-\)\(^6\). This leads to deleterious effects on health – may be cardiovascular diseases such as heart attacks and strokes, complications of obesity and diabetes, speeding up of the process of ageing, suppression of immune functions, infertility etc \(^7\). Stress during pregnancy leads to hypertension, diabetes mellitus, preterm delivery and fetal loss \(^8\)\(^-\)\(^{23}\). This work was conducted to observe the effect of chronic stress on lactogenesis in women of reproductive age 21-45 years (table-1).

Neilsen’s study indicates the prevalence of stress in women in different countries such as - in India (87%), Mexico (74%), Russia (69%), Brazil (67%), Spain (66%), France (65%), Italy (64%), Turkey (56%). India is the fastest developing country and Indian women are becoming the most stressed women on earth. The reason may be the societal and family structures have yet to adapt to the evolving work patterns in India. Women are trying to fulfill the responsibility of both modern career and traditional home life. In developing countries, the prevalence of stress during pregnancy has been found to range between 6-52.9% \(^{24}\)\(^-\)\(^{28}\). In our study, 37.5% pregnant women were mildly stressed, 35.41% were moderately stressed and 27.08% were severely stressed on the basis of Holmes and Rahe stress scale (table-2).
Studies indicate that about 20% of pregnant women experience severe stress due to marital difficulties, lack of partner, socio-demographic parameters such as low socioeconomic status, occupational status, low literacy rate etc. Our observations revealed that joint and nuclear family patterns do not bear any significant difference in the stress levels (table-3). Women belonging to different religious faiths such as Hindu, Muslim and Christian bear the same stress level due to life events, as they have almost same way of living (table-4). In our study we found that formally educated (graduation and above) women are able to deal appropriately with stressful conditions. As only 10% of graduates are either moderately or severely stressed, while stress of this severity is prevalent in more than 60% of the undergraduates (table-5). Education might be helping them to develop coping response/ability to decelerate the stress generated by life events. Though the stressful situations in the life of economically sound and economically poor women are different, the overall stress experienced by women of both economical strata is same. The women of middle economical group experience slightly higher stress, but statistically the difference is insignificant (table-6). Mean stress in working women is quite higher as compared to house wives. This might be because working women have to carry out multitasking and meet the professional stress (table-7).

Serum Cortisol levels of moderate and severely stressed women were significantly raised in comparison with mildly stressed women (table-8). Similar results were observed by Dallman et al., Harvaline et al. and Obel et al. and also by few other studies. The difference in the 3rd trimester and postpartal Cortisol level was insignificant indicating that
chronically stressed women remain in the same stressed state even in the postpartal period (tables – 9& 10).

In our study, serum Prolactin levels were not significantly altered in moderate and severely stressed groups when compared with mildly stressed group (table-11). Ueda et al in 1994 conducted a similar study in breastfeeding women assigned with noise stress and mental stress. They also found that Prolactin concentration did not vary significantly with levels of stress 43.

In the age group 21-30 years, for the first two postpartal days (initiation phase), the lactogenesis in moderate and severely stressed women was reduced insignificantly when compared with mildly stressed women. It indicates milk ejection is affected due to decreased secretion of Oxytocin. In the next five days, lactogenesis improved in moderately stressed women while it remained suppressed in severely stressed women. It indicates milk synthesis and ejection improved in moderately stressed women in this phase of lactation. In severely stressed women both milk synthesis and ejection get affected. This shows severe stress produces significant negative effect on lactogenesis (table-14).

In moderately and severely stressed women of age group 31-45 years, lactogenesis was reduced significantly when compared to mildly stressed women in all phases (up to 7 days) of lactation. It indicates that both milk synthesis and ejection got affected. Milk ejection is a neuroendocrinal reflex. When milk synthesis is decreased, there is negative effect
over the reflex action leading to decreased milk output. So, moderate and severe chronic stress generated due to various life events get compounded and has suppressive effect on all phases of lactation in the middle and elderly aged mothers (table-14).

On 6\textsuperscript{th} and 7\textsuperscript{th} day after delivery, there was no much difference in milk volumes in all the age groups. This was because volume increase and lactation establishment is usually up to 5\textsuperscript{th} day after postpartum. From 6\textsuperscript{th} day onwards, there will be maintenance of lactation (table-15).

Total milk volumes of all subjects were measured at different stress levels. It was observed that mildly stressed women produced ≈ 700ml of milk, moderately stressed women produced ≈ 425ml and severely stressed women produced ≈ 360 ml of milk. Milk volumes were reduced by ≈ 40\% in moderately stressed women and ≈ 50\% in severely stressed women when compared with milk volumes of mildly stressed women ( table -16).

Decrease in the milk volume in stressed women correlates to the first study conducted by Newton and Newton in 1948\textsuperscript{44 - 48}. They have shown that the maternal acute stress suppresses the lactation. A study by Feher, Berger etal in 1989 estimated the milk volume output from the mothers who gave birth prematurely\textsuperscript{49}. They also observed that the mothers were in stress and the milk volume was reduced when compared with the milk volume of control.

All recorded parameters of study subjects were represented in a master table (table –17). The parameters included are – i. Mean Cortisol levels (µg/dl) in 1\textsuperscript{st}, 2\textsuperscript{nd} and 3\textsuperscript{rd}
trimesters during pregnancy and after delivery. ii. Mean Prolactin levels before delivery and from 1\textsuperscript{st} day to 5\textsuperscript{th} day after delivery. iii. Mean milk volumes from 1\textsuperscript{st} day to 7\textsuperscript{th} day after delivery.

Our findings indicate that cumulative effects of changing life events and daily hassles with failure of coping reflex leads to chronic stress which causes decreased lactation.
REFERENCES:


