Chapter V

DISCUSSION

This chapter deals with the discussion of the results of the data analyzed based on the objectives and the hypotheses of the study.

Thus, the Statement of the Problem focused, in the present study, is “A Study to Assess the Effectiveness of Multimodal Intervention (Phytoestrogen Diet Therapy, Exercise and Counseling) on Prevention and Management of Menopausal Problems among Midlife Women in Selected Area, Chidambaram”.

Incorporating Roy’s adaptation theory, the researcher felt that there is a need for proper guidance to enable the midlife women to achieve and sustain with a good health. In phase I, the menopausal problems which make the midlife women to mal adaptive behaviour was assessed. Based on these findings, the interventions were designed. In phase II, administration of the interventions (multimodal interventions and EPCI) was done to make the midlife women develop adoptive behaviour to cope with the menopausal problems. The central purpose of achieving prevention and management of menopausal problems include evaluated. The evaluative measures assessed were menopausal problems, coping ability, biochemical parameters such as FSH, estradiol, HDL and LDL.
If adaptive behaviour is achieved, the midlife women can cross the rocky road of menopause smoothly without symptoms. If not they need to find ways to individualize themselves or strengthen the intervention till the midlife women achieve adoptive behaviour.

**Objectives**

**Phase I**

1. To identify the common menopausal problems among the midlife women.

2. To assess the intensity of the menopausal problems among the midlife women

3. To associate the menopausal problems with selected demographic and clinical variables.

**Phase II**

4. To determine the effectiveness of multimodal intervention on the menopausal problems and coping ability among the midlife women in the group I.

5. To evaluate the effectiveness of EPCI on menopausal problems and the coping ability among the midlife women in the group II.

6. To compare the menopausal problems, and analyse the coping ability between pretest and posttest among the midlife women in group I, II and in the control group.

7. To compare the biochemical parameters among the midlife women in group I, II and in the control group.
**Hypotheses**

H₁ - There will be more significant reduction of the menopausal problems of the midlife women who receive multimodal intervention in group I than in group II and in the control group.

H₂ - There will be more significant difference in the coping ability of the midlife women who receive multimodal intervention in group I than among the midlife women who practice EPCI in group II and the midlife women in control group.

H₃ - The will be more significant difference in the bio-chemical parameters of the midlife women who receive the multimodal intervention than among the midlife women who practice EPCI and the midlife women in the control group.

The collected data were analyzed, using descriptive and inferential statistics to determine the menopausal problems, to assess the common menopausal problems, intensity of the menopausal problems and the association of common menopausal problems with the selected demographic and clinical variables of the midlife women in phase I.

Descriptive and inferential statistics tests, for phase II, were used to test the effectiveness of multimodal intervention in terms of reduction in the menopausal problems, good coping ability, and the desirable changes in biochemical values.
Table 1 shows the distribution of demographic characteristics of the midlife women. Of the 275 midlife women, 101 (37%) were in the age group of 51-55 years, 78 (28%) were in the age group of 45-50 years, and only 96 (35%) were aged between 56-60 years.

Majority of 179 (65%) samples were Hindus, 75 (27%) were Christians and 21 (8%) were Muslims.

Regarding the educational status of the subjects, 181 (66%) samples had primary school education, 26 (9%) had higher secondary education, whereas only 14 (5%) samples had degree or above.

Regarding the occupation, majority of 163 (59%) were general workers, 71 (26%) were homemakers, 39 (14%) were non-professionals, and 2 (1%) were professionals.

Table 2 shows the clinical variables of the midlife women population. Among the midlife women, 105 (38%) were in the stage of perimenopause, 102 (37%) were in menopausal stage and only 68 (25%) were in postmenopausal stage.

The mean age of menopause, in the present study, was observed as 46.22 years which is similar to the mean age at menopause of 44.49 years reported by Dutta, et al., (2012). On the other hand, it is comparable to the findings of Singh and Arora (2015) who put the mean age of Indian women as 44 years.
Among the midlife women, 105(38%) were in the stage of Perimenopause, 102(37%) were in the stage of menopause and 68(25%) were in the post menopausal stage.

**The study result is supported by the following studies:**

Golyan et al., (2012) did a study to assess the quality of life among various stage of menopause. The clinical variable distributed, in their study, regarding the stage of menopause that 74(35%), of the 210 midlife women, were in the stage of Perimenopause, 80(38%) were in the stage of menopause and 56(27%) were in the post menopausal stage.

All the 275(100%) had a history of regular menstruation. A majority of 257(94%) had recent changes in menstruation and the changes include absence of bleeding, with 102(39%), excessive bleeding with 16(24%) irregular bleeding, with 43(17%) scanty bleeding and painful bleeding with 24(9%).

Among the total midlife women selected for the study, 151(55%) gained weight, 69(25%) did exercise regularly, majority of them did not take any remedial measures for menopausal symptoms and only 9(3%) of them were taking hormones for menopausal problems.

Among the midlife women selected, a majority of 206(75%) never had the habit of exercising regularly and 69(25%) were doing exercise.
The first objective of the study was to identify the common menopausal problems among the midlife women

Table 9 show the findings regarding the common menopausal problems among the midlife women. The menopausal problems, when it is experienced by more than 60% of midlife women, are termed as most common problems. Numerous research studies state that the common menopausal problems and the severity of the menopausal problems differ by ethnicity. Natarajan (2013) revealed the evidence that there is a great diversity in the intensity of menopausal symptoms across the culture and ways of coping adopted by the midlife women.

The most common problems experienced by the midlife women in the present study were, 209(76%) had mood swing, 181(66%) had joint pain, 178(65%) had lack of energy, 172(63%) had leg pain, 176(64%) had dribbling of urine, 170(62%) felt hot flashes, 168(61%) had difficulty in falling asleep and 165(60%) of them had vaginal dryness.

Typically, women begin to experience menopausal symptoms around her mid forties. Identifying and disseminating the menopausal symptoms are the most bothersome situations to women during the menopausal transition. It is essential for providing planning and care to the midlife women to overcome the difficulties during menopausal transition.
The present study findings were congruent with the following studies:

**Bindhu (2014)** did a study on the prevalence of common menopausal symptoms among the rural menopausal women in Kerala. The findings revealed the fact that, the most common symptoms, found among the midlife population, were hot flashes with 40.9%, muscle and joint pain with 35.9%, lack of energy with 49.7%. The least common symptoms were head ache with 13.1%, night sweats with 16.9%, palpitation with 9%, and inner restlessness with 15%.

**Singh and Pradhan (2014)** did a cross-sectional study to assess the common menopausal symptoms among the rural menopausal women at Delhi. The findings showed the point that of the 275 midlife women, 225(89.3%) felt atleast one or more menopausal problems. The most common menopausal problems was sleep disturbance with 62.7%, hot flashes with 46.4%, muscle or joint pain with 59.1%, and night sweats with 45.6%.

**Table 10** shows the *least common problems* of menopause among the midlife women. The menopausal problems, when it is experienced by 30- 60% of midlife women, are considered as the least common problems. The least common problems experienced by the midlife women include night sweats with 148(54%), unusual feeling of tension with 139(51%), weight gain with 133(48%), head ache with 129(47%), gas pain with 115(42%), forgetfulness with 114(42%), general decrease in performance of ADL with 117(43%),
inner restlessness with 83(30%), decrease in concentration with 110(40%), low back pain with 104(38%), involuntary urination with 101(38%) and unusual sweats with 101(37%).

Table 11 shows the rare Problems of menopause among the midlife women. The menopausal problems, when it is experienced by below 30% of midlife women, are considered as rare problems. The rare problems encountered by midlife women were increased need to urinate with 80(29%), vaginal bleeding with 80(29%), burning in the vagina with 80(29%), breast pain with 76(28%), difficulty in urination with 64(23%), increased facial hair with 58(21%), feeling bloated with 57(21%), change in sexual desire with 55(20%), feeling of fear with 52(19%), palpitation with 52(19%), low self esteem with 45(16%), feeling sad with 36(13%), feeling down with 31(11%), tightness of the chest with 10(4%).

The study findings were consistent with the following studies:

Asadi, Jouyandeh, and Nayebzadeh (2012) conducted a cross sectional study on the prevalence of menopausal symptoms among 134 Iranian women. The most common menopausal symptoms experienced by the midlife women was hot flushes 69.5%, mood swing 62.6%, lack of energy 65% vaginal dryness 41.1%, urinary symptoms 68.3% and joint and muscle pain 69.9%. The least common symptoms experienced by the midlife women were sleep problems 50.4%, night sweats 48.2%, and memory loss
42.3%. And the rare problems were, change in sexual desire 18.3% palpitation 6.6%, anxiety 5.8%, and depression 4.4%.

Table 12 reveals the fact that all the menopausal women experience minimum of one and maximum of nine problems. Of the 275 midlife women, many of them had the experience of an average of three menopausal problems. Congruent findings were observed in another study, done by Broker, et al., (2013). The study revealed that an average of 3.90 menopausal symptoms were found which happened to be matching the findings of the present study. Joseph et al., (2014) did a study on the prevalence of menopausal symptoms among the midlife women. The results showed the point that midlife women were suffering from at least seven menopausal symptoms causing adverse effects on their day today life.

The second objective of the study was to evaluate the intensity of menopausal problems among the midlife women.

Table 13 denotes the intensity of physical symptoms. Totally 94(55%) of the midlife women experienced hot flashes at severe sever level, 64(43%) had night sweats at severe sever level, 51(46%) experienced unusual sweats at moderate level, 48(42%) had gas pain at severe level, 81(45%) had joint pain at severe level, 46(35%) had head ache at sever level, 80(45%) had lack of energy at moderate level, 49(37%) gained weight at moderate level, 45(78%) had increased facial hair growth at mild level, 38(67%) had feeling
bloated at severe level, 66(64%) had low back pain at severe level, and 80(47%) of them had severe leg pain.

**Okim, et al., (2010)** states that the menopausal problems and the severity of the menopausal problems differ by ethnicity. Considering the piece of information of his study, the findings of this present study were planned and geared up.

The findings were similar to those of **Ayranci, et al., (2010)** who assessed the menopausal status among Turkish midlife population. The findings showed the most common problems experienced during the midlife period as hot flashes occurring among 96.5% of the females and it was found to be severe with 32.9% moderate with 43.1% and mild with 20.4% of the midlife population. Back ache and muscle pain were found to be present with 95% of the midlife women and they were accounted for 25.9% at severe level, 46.0% at moderate level and 23.1% at mild level, besides 91.7% of them were suffering from head ache (21.9% of them had severe level, 34.9% of them had moderate level and 34.9% of them had mild level) and 91.0 % of them were feeling tired (15.3% severe level, 38.6% moderate level and 37.1% mild level).

**Table 37 to 39** related to the **intensity of psychological problems** as 63(30%) of them had moderate level of mood swing, 58(68%) of them reported about decrease in their general performance of ADL at moderate level, 57(41%) of them felt moderately unusual tension often, 55(54%) of them being impatient
with others moderately, 51(45%) of them experienced forgetfulness at moderate level, 45(41%) of them felt their concentration level decreased moderately, 45(54%) of them had inner restlessness moderately, 45(39%) of them felt their accomplishing level less than their usual level mild level, 41(47%) of them experienced confrontation in moderate level, 30(58%) of them had feeling fear moderately, 24(53%) of them had moderately low self-esteem and 15(48%) of them felt feeling sad at moderate level.

Congruent findings were reported by Tamaria, et al., (2013) on the risk assessment of psychological problems among the menopausal women at Delhi. The results revealed that 56% of them suffered from moderate level of mood swing and decrease in their performance, 31.5% of them felt inner restlessness, 31% of them suffered from moderate to severe level of depression and 42% of them felt mild depression, 45% of them had decreased level of concentration at mild to moderate level, 32% of them had sleep disturbances at moderate level and 65% of them felt unusual feeling of tension at mild to moderate level.

Similar findings were observed in the study of Rahman, Zainudin and Vernamun (2010) on the assessment of menopausal symptoms by using the MRS among menopausal women in Malaysia. The results revealed that 67.1% of them suffered from mental exhaustion at mild level, 37.9% of them had irritability and mood swing at moderate level, 32.6% had depressive mood at mild
to moderate level and 36.5% had anxiety at moderate to severe level.

Women going through menopause may find their sleep cycle altered and become reduced. Numerous studies have shown that, during menopausal transition, midlife women have less than six hours sleep as a routine which lead to greater risk of various health problems like coronary heart disease, depression, etc. Chedrani, et al., (2010)

Table 14 indicates the intensity of Sleep problems, as 83(49%) of them had mild level of difficulty in falling into sleep, 51(55%) of them felt mild level of difficulty in sleeping through, 40(36%) of them felt waking up early at mild level.

The findings were comparable to findings in the study carried out by Yazdi, et al., (2013). The study was done to identify the influence of sleep disturbances during menopausal transition. The results showed that 50% of them felt difficulty in falling into sleep (12% at severe level, 28% at moderate level and 10% at mild level), 40% of them felt difficulty in sleeping through (23% at mild level and 17% at moderate level) and 51% of them felt early awakening at mild to moderate level.

Research studies gave an evidence that lack of estrogen during menopausal transition may cause urogenital atrophy (washing away of muscle mass) thus leading to the weakening of the bladder, ureter and urethra which may put the women to get
various symptoms like incontinence, dribbling dysuria, etc. 
Charless (2015).

Table 15 infers the fact that the intensity of urinary problems found 22(34%) of them experiencing moderate level of difficulty in urination, 41(51%) of them feeling severe level of increased need to urinate, 51(50%) of them having severe level of involuntary urination, and 83(47%) of them having dribbling of urine at mild level.

The findings were consistent with the result of Kriss, et al., (2013) on the prevalence and occurrence of urinary incontinence among the midlife women. The findings showed that 50% of them had difficulty in urination at moderate level, 55% of them suffered from increased need to urinate at moderate level, 61% of them suffered from involuntary urination at mild level and 27% of them suffered from dribbling of urine at mild level.

Menopausal transition causes dropping of estrogen level which makes the vagina drier, thinner and lose, its elasticity, and thus leads to various symptoms like dyspareunia, changes in sexual desire, vaginal burning, and bleeding. Research studies show that 17 to 45% of women may feel sexual problems after menopause North American Menopause Society, (2015).

Table 15a denotes the intensity of sexual problems among 275 midlife women as, 25(45%) of them having mild level of change in sexual behaviour, 36(64%) of them feeling sever level of vaginal
dryness, 35(44%) of them having severe level of vaginal spotting, 45(56%) of them having burning in the vagina at severe level, 43(57%) of them having severe level of breast pain.

This finding was comparable with the study conducted by **Cigdem Yucel and Eroglu (2013)** on the prevalence of sexual problems among menopausal women at Turkey. The results indicated that 80% of them felt decrease in their sexual arousal at mild level, 68% of them expressed changes in their sexual desire at moderate level. During sexual intercourse 42.4% of them experienced vaginal dryness at moderate to severe level, 30.1% dyspareunia at moderate to severe level, 54.9% burning and 4.5% bleeding problems at moderate level.

**Table 16** shows the findings related to **cardiac problems** as, 24(46%) of them felt mild level of palpitation and 4(40%) of them had severe level of chest tightness.

Congruent findings were recorded by **Chou and Pang (2014)** who assessed the intensity of menopausal symptoms among midlife women in China. The result revealed that the physical symptoms were noticed at moderate level with 88.5%, whereas psychological 17.9%, somatic 42.8%, and urogenital 34.8% were noticed among the midlife women at severe level and they also revealed that it affected their quality of life.

**Joseph, et al., (2014)** evaluated the severity of menopausal symptoms among the midlife women at south Karnataka, India. The
findings showed the commonest symptoms being joint pain and mental exhaustion which were noticed by 85.4% at severe level among the midlife women.

**The third objective of the study was to associate the common menopausal problems with selected demographic and clinical variables**

*Table 17 to 34* shows the association of most common menopausal problems with some selected demographic variables such as age, education occupation, marital status, working pattern and the clinical variables such as stage of menopause, weight gain and dietary habit.

*Table 18* explains the point that there was a statistically significant association between joint pain and the demographic variables of education (p<0.01), occupation (p<0.001), working pattern (p<0.001) respectively.

It reflects the fact that when the education level of the midlife women was in advanced level the joint pain expressed by the midlife women, was decreased. The incidence of joint pain was higher among the general category than the home makers, non professional and professionals. And most of the moderate workers expressed joint pain than the sedentary and heavy workers.

The present study finding were consistent with the findings of Kalahoradi, et al., (2012). They found that there was a statistically
significant association between the joint pain and selected variables such as working pattern (p<0.001), education (p<0.01), weight gain (p<0.001) and the stages of menopause (p<0.001).

**Table 19** reveals the association between the lack of energy and the selected demographic variables of education at p<0.03, occupation at p<0.001, working pattern at p<0.001.

It was also identified that higher percentage of midlife women having primary education felt lack of energy than the uneducated. Midlife women who poses higher education and degree and above and higher proportion of general workers felt lack of energy than the home makers, non professionals and professionals. Whereas higher percentage of moderate workers suffer from lack of energy than the sedentary and heavy workers.

**Table 20** shows the findings that there was a significant association between leg pain and the demographic variables of age at p<0.05 and working pattern p<0.03.

It implies the piece of information that, when the age of women increases, the women feels experiencing leg pain proportionately increasing whereas the higher percentage of general workers informed of leg pain severe than the home makers, non professionals and professionals, while a higher percentage of moderate workers suffer from leg pain than the sedentary workers and heavy workers.
Table 21 explains the findings that there was a significant association between the mood swings and the demographic variables of age at p<0.05 and working pattern at p<0.05. The findings rear up the fact that higher percentage of women in the age group of 51-55 years experience greater level of mood swing than the women at the age of 45-50 yrs and 56 -60 yrs.

Table 22 reveals the findings that there was a significant association between the difficulties in urination and demographic variables of age at p<0.02. It shows the fact that if age of the women increases, the number of women suffer from difficulty in urination also increases.

Table 23 shows the results that there was a statistically significant association between the dribbling of urine and demographic variables of age at p<0.05. The findings revealed the fact, if age of the women raises the proportion of women suffer from dribbling of urine also increases, whereas higher percentage of moderate workers had more dribbling of urine than the sedentary workers and heavy workers.

Table 24 shows the association between the vaginal dryness with selected demographic variables. The findings revealed the point that there was a significant association between the vaginal dryness and the demographic variables of age at p<0.04. It shows the fact that as the age advances the percentage of women experiencing vaginal dryness also increases.
Table 25 shows the findings that there was a significant association between hot flashes and the clinical variables such as stage of menopause, weight gain and dietary habit. There was a highly significant association between hot flashes and weight gain at p<0.001 and the dietary habit at p<0.001. It implies the point that higher percentage of women gained weight sense and the hot flashes more than the women who did not gain weight, whereas higher percentage of non vegetarian women felt more hot flashes than the vegetarians.

Table 26 with its findings show that there was a highly significant association between joint pain and the clinical variables of weight gain at p<0.001 and the dietary habit at p<0.001. It reveals the fact that higher percentage of women gained weight suffer from joint pain than the women did not gained weight, and higher percentage of non vegetarian women felt joint pain than the vegetarians.

Table 27 infers the association between lack of energy with selected clinical variables, there was a significant association between the lack of energy and the clinical variables of stage of menopause at (P <0.02). It implies that higher proportion of women belonging to perimenopausal category felt lack of energy than the non vegetarian women felt more lack of energy then the vegetarian and it was found to be statistically significant at p<0.01.
Table 28 infers with its findings that there was a significant association between leg pain and the clinical variables of weight gain at p<0.001 and the dietary habits at p<0.03.

It reveals the fact that higher percentage of women gained weight suffer from leg pain than the women who did not gain weight whereas higher percentage of non vegetarian women suffer from leg pain than the vegetarians.

The following study findings were consistent with the findings of present study:

Gold, et al., (2016) conducted a longitudinal study on the association between menopausal symptoms and the demographic variables. The findings indicate that the menopausal symptoms strongly associated with the age, stage of menopause, BMI, weight and dietary pattern.

Joseph, et al., (2014) conducted a study on the assessment of menopausal symptoms among the midlife women attending various outreach clinics in south Canara district of India. The findings revealed that there was a highly significant association between physical problems (hot flashes, leg pain, joint pain) at (P < 0.001) psychological problems (mood swings, depression) with age, education, occupation, status of menopause and weight gain. It was also found that no significant association between genito urinary symptoms (difficulty in urination, dribbling of urine and
vaginal dryness) with age, occupation, status of menopause and weight gain.

To conclude the trust worthy findings, from phase I, suggested the mean age of rural Indian women as 46.22, and the most common problems occur during this transitional period of menopause are hot flashes, joint pain, lack of energy, leg pain, mood swing, difficulty in urination, dribbling of urination and vaginal dryness and it affects the midlife women ranged from mild to very severe level. On average, midlife women suffer from minimum of three and maximum of nine menopausal problems coupled with negative impacts on their daily activities. The intensity of the menopausal problems should take into consideration while planning for the care to the midlife women which would help them to lead a quality of life.

**Phase II**

According to the conceptual framework, the first component was assessing the maladaptive state. It was accomplished by means of pretest and post assessment of menopausal problems, coping ability and biochemical parameters. It was evident from the conceptual framework that the post assessment value of experimental groups had showed marked changes in the menopausal problems, coping behaviour and biochemical parameters.
Distribution of demographic variables of the midlife in Phase II

Table 33 shows the characteristics of demographic variables among the 149 midlife women, in group I (n=50), group II (n=49) and control group (n=50). The findings show the fact that the non significant chi square value infers the fact that the midlife women, in the three groups, were almost similar in the demographic characteristics such as education, occupation, work pattern and type of family except age.

Since the variable age was found to be statistically significant (p<0.04), it was used as one of the covariate in ANCOVA analysis to compare the post mean value of the three groups.

Table 34 shows the characteristics of clinical variables among the midlife women in group I, group II and control group. The findings show the trustworthy information that the non significant chi square value inference that the midlife women, in the three groups, were almost similar in the clinical variables such as stage of menopause, recent weight gain and dietary habits.

The fourth objective of the study was to determine the effectiveness of multimodal intervention on menopausal problems among the midlife women in group I

The study aimed to investigate the effectiveness of multimodal intervention on menopausal problems. The menopausal problems of present study variables were grouped under major domains as physical, psychological, urogenital, and cardiac problems.
Quantification and estimated for all the outcome variables was achieved by the posttest.

The data provided, in Tables 44 to 47, reveal the comparison of mean and standard deviation of menopausal problems of midlife women between the pretest and posttest in group I.

Physical problems were assessed in different domains such as somatic problems and aches and pains.

Table 45 shows the mean somatic problem score as 12.260 with the standard deviation of 3.607 in pretest which has reduced to 6.840 with the standard deviation of 2.713 during the posttest. The findings show the point that statistically more significant difference of somatic problem mean score was found in the posttest than in the pretest among the midlife women in group I. The finding was found to be significant with the ‘t’ test (‘t’ value 14.460 at p<0.001***).

The mean score of aches and pain was 9.140 with the standard deviation of 2.531 which has reduced to the mean value of 4.300 with the standard deviation of 2.573. The findings show that statistically more significant difference of aches and pain mean score was found in the posttest in than in the pretest among midlife women in group I. The finding was found to be significant with the ‘t’ test (‘t’ value 12.903 at p = 0.001***).

The study result was supported by the study conducted by Carmingo, et al., (2010) on the effect of dietary soy
supplementation along with exercise and placebo (1mg estradiol) on menopausal problems. The findings revealed the point that the mean somatic score 12.28 was reduced to 7.52 and it was highly statistically significant p<0.001. Further, the mean score of aches and pain at 10.54 was reduced to 5.28 and found to be significant at p<0.001. The placebo group shows no significant changes on the somatic and aches and pains were detected. Dietary soy isoflavones and exercise found to be more safe and effective than the placebo.

**Potter (2014)** did an experimental study on the effect of soy isoflavones on lipids and bone density among postmenopausal women. The findings stated that significant increases in bone mineral content and density observed in experimental group rather than control group p<0.005.

**Lucio, Pedro, Paiva and Neto (2011)** investigated a double blind randomized controlled trail on the effect of dietary 50 gms of soy supplementation compared to estrogen and placebo on menopausal symptoms. The results revealed that the dietary soy supplementation and hormone therapy was found significant difference on menopausal symptoms where as 50 gms of soy considered as a safe and natural therapy for reducing somatic and urogenital symptoms of menopause. It was statistically significant at p<0.001.
**Psychological Problems**

Psychological problems were assessed in different domains such as mental exhaustion, irritability, depression and sleep problems.

*Table 45* shows the mean score of mental exhaustion as 5.440 with the standard deviation of 2.139 in the pretest which has reduced to the mean value of 3.380 with the standard deviation of 1.783. The findings showed that statistically more significant difference of mental exhaustion mean score was found in the posttest than in the pretest among the midlife women in group I. The findings was found to be significant with the ‘t’ test (*t* value 7.500 at *p* < 0.001 ***).

The average score of depression at 2.760 with the standard deviation of 2.085 has reduced to the average score of 1.340 with the standard deviation of 1.422. The findings show the point that statistically more significant difference of depression mean score was found in the posttest than in the pretest among midlife women in group I. The finding was found to be significant with the ‘t’ test (*t* value 6.758 at *p* < 0.001***).

The mean score of irritability was 6.500 with the standard deviation of 2.851 which has reduced to the mean value of 4.240 with the standard deviation of 2.676. The findings showed the fact that statistically more significant difference of irritability mean score was found in the posttest than in the pretest among midlife
women in group I. The findings was found to be significant with ‘t’ test (‘t’ value 11.817 at p < 0.001***).

The mean score of sleep problems found as 3.860 with the standard deviation of 2.147 has reduced to the mean value of 2.860 with the standard deviation of 1.036. The findings showed statistically more significant difference of sleep problems mean score in the posttest than in the pretest among midlife women in group I. The finding was found to be significant with the ‘t’ test (‘t’ value 0.740 at p < 0.001 ***).

**Urogenital Problems**

Urogenital problems were assessed in different domains such as urinary problems and sexual problems.

Table 46 reveals the mean score of urinary problems was 6.080 with the standard deviation of 3.009 in the pretest which is found reduced to the mean value of 2.320 with the standard deviation of 1.973. The findings showed that statistically more significant difference of urinary problems mean score was found in the posttest in than the pretest among midlife women in group I. The finding was found to be significant with the ‘t’ test (‘t’ value 14.064 at p < 0.001***).

The mean score of sexual problems found 6.360 with the standard deviation of 3.403 in the pretest has reduced to the mean value of 2.380 with the standard deviation of 2.078. The findings showed that statistically more significant difference of sexual
problems mean score was found in the posttest in than the pretest among the midlife women in group I. The findings was found to be significant with the ‘t’ test (‘t’ value 0.546 at p < 0.001***).

**Cardiac Problems**

_Table 47_ depicts the mean score of cardiac problems as 1.520 with the standard deviation of 1.752 in the pretest which is found reduced to the mean value of 1.300 with the standard deviation of 1.631. The findings showed that statistically more significant difference of cardiac problems mean score was found in the posttest than in the pretest among the midlife women in group I. The finding was found to be significant by ‘t’ test (‘t’ value 1.753 at p < 0.05*).

Phytoestrogens are the plant estrogens, which have the chemical structure like estradiol and selective estrogen receptor modulators, bind to estrogen receptors and have weak estrogenic and anti estrogenic effects depending on their concentration of endogenous estrogens and other dietary factor. The randomized control trails depict the fact that soy supplementation have reduced the level of menopausal problems, especially somatic symptoms, vaginal dryness, preserve the bone mass and thus reducing the bone mass and decreasing the LDL cholesterol (Gold, et al., 2016).

Similar findings were observed in the following studies:

_Andreson, et al., (2015)_ conducted a web based multimodal intervention on menopausal problems among the midlife women.
The results revealed that mean score was found decreased for the psychological problems such as mental exhaustion, anxiety and depression in the posttest and it was found to be significant at \( p<0.001 \). Simultaneously, the study found significant reduction of physical problems like vasomotor at \( p<0.004 \) and urinary and sexual problems at \( p<0.001 \) after the multimodal intervention. Further, it was observed that there was an improvement in coping ability among the menopausal women undergoing multimodal intervention than in the control group.

Khadigeh (2015) evaluated the effectiveness of multimodal intervention on the physical activity and health promotion among midlife women. The findings showed that statistically more significant difference was found after adopting multimodal intervention, indicating decreased level of the menopausal symptoms such as physical and psychological symptoms at \( p<0.005 \), urinary problems at \( p<0.01 \) and sexual problems at \( p<0.001 \). The above mentioned supportive studies prove and support the present findings that multimodal intervention was effective in reducing the menopausal problems among the midlife women.

**Findings related to effectiveness of multimodal intervention on Coping ability among the midlife women group I**

Table 48 shows the pretest mean score of active coping ability as 2.562 with the standard deviation of 1.270 which has increased with the mean value of 10.083 with the standard deviation of 2.430 in posttest. The findings showed that statistically
more significant difference of active coping mean score was found in the posttest than in the pretest among the midlife women in group I. The finding was found to be significant with ‘t’ test (‘t’ value 19.665 at p < 0.001***).

In the pretest mean score of denial coping ability was 4.833 with the standard deviation of 1.404 and it has reduced to the mean value of 2.333 with the standard deviation of 1.419 in the posttest. The findings show that statistically more significant difference of denial coping mean score was found in the posttest than in the pretest among the midlife women in group I. The findings was found to be significant with ‘t’ test (‘t’ value 15.868 at p < 0.001***).

In the pretest, the mean score of disengagement coping was 1.520 with the standard deviation of 1.148 which has increased to the mean value of 4.708 with the standard deviation of 1.270 in the posttest. The findings show that statistically more significant difference of disengagement coping ability mean score was found in the posttest than in the pretest among the midlife women in group I. The finding was found to be significant with the ‘t’ test (‘t’ value 14.895 at p < 0.001 ***).

The pretest mean score of religious coping ability was 2.437 with the standard deviation of 1.089 which has slightly increased to 2.791 with the standard deviation of 1.071 in the posttest. The
findings showed that the religious coping ability is found to be statistically non significant.

The pretest mean score of seeking support coping ability was 3.312 with the standard deviation of 1.815 which has increased to 5.708 with the standard deviation of 1.844 in the posttest. The findings show that statistically more significant difference of seeking support coping ability mean score was found in the posttest than in the pretest among the midlife women in group I. The finding was found to be significant with the ‘t’ test (‘t’ value 10.499 at p < 0.001***).

The pretest mean score of planning coping ability was 1.083 with the standard deviation of 1.027 which has increased 4.479 with the standard deviation of 1.901 in the posttest. The findings showed that statistically more significant difference of planning coping ability mean score was found in the posttest than in the pretest among midlife women in group I. The finding was found to be significant with the ‘t’ test (‘t’ value 12.772 at p < 0.001***).

The fifth objective of the study was to determine the effectiveness of EPCI on menopausal problems and the coping ability among the midlife women in group II

The data, provided in Table 49 to 52, reveal the comparison of the mean and standard deviation of menopausal problems of the midlife women between pretest and posttest in group II.
Physical Problems

Table 49 reveals the mean somatic problem score was 11.877 with the standard deviation of 3.591 which has increased to 12.510 with the standard deviation of 3.446 during the posttest. Statistically no significant difference found between pretest and posttest mean score of somatic problems of midlife women in group II (‘t’ value 3.534, P >0.601).

The mean aches and pains score of 9.061 with the standard deviation of 2.860 has increased to 10.938 with the standard deviation of 2.511 during the posttest. Statistically, no significant difference found between pretest and posttest mean score of aches and pains of midlife women in group II (‘t’ value 5.637, P >0.816).

The finding of the present study is supported by the following studies:

Daley, et al., (2014) evaluated the effectiveness of exercise on the vasomotor symptoms among the midlife women. The findings showed no significant difference found in the physical problems such as somatic, aches and pain among the control and experimental groups (‘t’ 4.58, p>0.923, ‘t’ 5.153, p>0.822). However, exercise will not make any changes in physical problems (somatic, aches and pains) among the menopausal women.

Psychological Problems

Table 50 depicts the mean score of mental exhaustion was 5.285 with the standard deviation of 2.474 which has reduced to
4.224 with the standard deviation of 2.133. The findings show statistically highly significant difference of mental exhaustion mean score in the posttest than in the pretest among the midlife women in group II. The finding was found to be significant with the ‘t’ test (‘t’ value 6.711 at \( p < 0.001 \)).

The mean score of depression was 2.816 with the standard deviation of 2.297 which has reduced to 1.795 with the standard deviation of 1.580. The findings show statistically more significant difference of depression mean score was found in the posttest than in the pretest among the midlife women in group II. The finding was found to be significant with the ‘t’ test (‘t’ value 6.931 at \( p < 0.001 \)).

The mean score of irritability was 5.112 with the standard deviation of 3.133 which has reduced to 3.081 with the standard deviation of 2.387. The findings showed statistically more significant difference of irritability mean score was found in the posttest than in the pretest among midlife women in group II. The finding was found to be significant with the ‘t’ test (‘t’ value 8.820 at \( p < 0.001 \)).

The mean score of sleep problems was 3.183 with the standard deviation of 2.368 which has reduced to 3.126 with the standard deviation of 2.318. The findings show statistically more significant difference of sleep problems mean score was found in the posttest than in the pretest among midlife women in group II. The
finding was found to be significant by ‘t’ test (‘t’ value 6.473 at p < 0.001***).

The present study findings were congruent with Sterfeld, et al., (2013) performed a study on efficacy of flexibility exercise and counseling on menopausal problems. The findings reveal greater level of improvement in sleep quality p<0.001, greater level of reduction of insomnia symptoms p<0.03, significant difference psychological symptoms (anxiety, depression and irritability) at p<0.004. The findings conclude that three months intense training of exercise and counseling alleviate the psychological problems including the improvement of the sleep quality.

**Genito Urinary Problems**

**Table 51** depicts the mean score of urinary problems was 3.979 with the standard deviation of 3.165 which has reduced to the mean 0.918 with the standard deviation of 1.255. The findings showed statistically more significant difference of urinary problems mean score in the posttest than in the pretest among the midlife women in group II. The finding was found to be significant with the ‘t’ test (‘t’ value 8.956 at p < 0.001***).

The mean score of sexual problems was 5.306 with the standard deviation of 3.029 which has reduced to 5.183 with the standard deviation of 3.059. The findings show statistically more significant difference of sexual problems mean score was found in the posttest than in the pretest among the midlife women in
group II. The findings was found to be significant with the ‘t’ test (‘t’ value 0.759 at p < 0.05**).

The present study findings were similar to the study findings of Tan et al., (2014) on the effect of exercise on menopausal problems. The result showed that statistically significant difference was found urinary problems at p<0.001, sexual problems p<0.04, vaginal dryness p<0.01.

**Cardiac Problems**

Table 52 shows the mean cardiac Problems score as 1.530 with the standard deviation of 1.487 which has reduced to 1.380 with the standard deviation of 1.394 during the posttest. Statistically no significant difference found between pretest and posttest mean score of somatic problems among the midlife women in group II (‘t’ value 2.624, P >0.112).

**Findings related to effectiveness of EPCI on Coping ability among midlife women group II**

Table 53 reveals the findings of coping ability among the midlife women in pretest and posttest.

The pretest mean score of active coping ability was 3.479 with the standard deviation of 1.443 which has increased to of 7.145 with the standard deviation of 2.306 in the posttest. The findings show statistically more significant difference of active coping ability mean score in the posttest than in the pretest among
midlife women in group II. The finding was found to be significant with the ‘t’ test (‘t’ value 11.619 at p < 0.001***).

The pretest mean score of **denial coping ability** of 4.500 with the standard deviation of 1.254 has slightly increased to 5.770 with the standard deviation of 1.574 in the posttest. The findings show statistically more significant difference of denial coping ability mean score in the posttest than in the pretest among the midlife women in group II. The findings was found to be significant with the ‘t’ test (‘t’ value 6.447 at p < 0.05*).

The pretest mean score of **disengagement coping** was 1.416 with the standard deviation of 0.895 which has increased to 3.125 with the standard deviation of 1.919 in the posttest. The findings showed that statistically more significant difference of disengagement coping ability mean score was found in the posttest than in the pretest among the midlife women in group II. The finding was found to be significant with the ‘t’ test (‘t’ value 6.318 at p < 0.05*).

The pretest mean score of **religious coping ability** was 2.458 with the standard deviation of 0.898 which has slightly increased to 2.979 with the standard deviation of 1.193 in the posttest. The findings showed that the religious coping ability was found to be statistically non significant.

The pretest mean score of **seeking support coping ability** was 2.854 with the standard deviation of 1.637 which has
increased to 4.458 with the standard deviation of 1.725 in the posttest. The findings show that statistically more significant difference of seeking support coping ability mean score was found in the posttest than in the pretest among the midlife women in group II. The findings were found to be statistically non significant.

The pretest mean score of planning coping ability was 1.270 with the standard deviation of 1.215 which has increased to 3.000 with the standard deviation of 1.637 in the posttest. The findings showed that statistically more significant difference of planning coping ability mean score was found in the posttest than in the pretest among the midlife women in group II. The findings was found to be significant by t test (‘t’ value 7.452 at p < 0.001 ***).

The study findings are comparable to the study findings of Hacun (2012) on the effectiveness of exercise on menopausal problems and coping ability of midlife women. The result shows statistically significant difference in coping domains (active, denial, and planning ability) at p<0.01level excluding religious and support coping ability.

The sixth objective was to compare the effect of multimodal intervention and EPCI on the menopausal problems, and the coping ability among the group I, group II and control

The data, provided in Table 59 to 68, show the pretest menopausal problems (physical, psychological, urogenital and cardiac problems) and coping ability among group I and group II
and control group. The findings show the physical problems of various domains such as somatic (p>0.541), aches and pain (p>0.753). The findings of psychological problems reveal the various domains such as mental exhaustion (p>0.938), depression (p>0.896), irritability (p>0.066) and sleep problems (p>0.078). The findings of urogenital problems depict the various domains such as urinary problems (p<0.004) and the sexual problems (p>0.306). The findings of cardiac problems show the value of (p>0.846).

The non significant value of various domains of physical problems such as somatic, aches and pains, psychological problems such as mental exhaustion, depression, irritability and sleep problems, urogenital problems such as sexual problems and cardiac problems among three groups in the pretest indicates that all the three groups were similar in all the aspects of menopausal problems except urinary problems. Hence, the groups were further comparable. Since the urinary problems found to be significant, it was included as one of the covariates in ANCOVA analysis to the compare the mean value of three groups in the posttest.

Table 35 shows the comparison of intensity of physical problems in the aspect of somatic problems of midlife women among the groups.

One of the most important common physical problems crops up during the menopausal transition was hot flash, which is described as a sudden, transient sensation of warmth that is
noticeable in face and upper body parts. It results from the body’s reaction to a decreased production of the hormone estrogen. For some women, the estrogen production decreases gradually, producing mild hot flashes. But, for others the ovary stops producing estrogen abruptly, and for those women who get hot flashes it can be severe.

The findings of the present study, regarding hot flashes in group I, show 29(58%) of them had severe and 12(24%) had moderate level, 7(14%) had mild level and 2(4%) of them not sensing hot flashes before the intervention, while in the posttest, most of them 22(44%) found relief from the symptoms and only 17(34%) experienced moderate level, 10(20%) had mild level and only 1(2%) had severe level of hot flashes.

In group II, 27(55%) of them had hot flashes at severe level, 14(28%) had at moderate level, 7(14%) had at mild level and 1(2%) did not sense the hot flashes in the pretest. Whereas, in posttest 27(54%) had severe level hot flashes, 10(20%) had at moderate level, 5(10%) had at mild level and only 3(6%) did not feel the hot flashes.

In the control group, 31(62%) of midlife women experienced severe level of hot flashes, 11(22%) had at moderate level, 7(14%) experienced at mild level and 1(2%) did not experience hot flashes in the pretest. Whereas in the posttest, 25(50%) had hot flashes at severe level, 14(28%) of them experienced at moderate level,
10(20%) had at mild level of hot flashes and 1(2%) did not have hot flashes.

The findings were comparable to the study conducted by Messina and Hughes (2014). They identified the efficacy of soy food and soy isoflavones extracts on alleviation menopausal problems. The findings show that both the treatments were effective in reducing the menopausal symptoms (p<0.01). The severity of hot flashes reduced nearly 50% from severe to no symptoms.

Table 36 shows the comparison of intensity of physical problems of aches and pains among midlife women among the three groups.

Joint pain is common among the midlife population. The findings, regarding joint pain in group I, indicate that many of them 25(50%) had at severe pain, 11(22%) had at mild level, 10(20%) had at moderate level of joint pain and 4(8%) of them did not experience joint pain in the pretest, while in the posttest most of them 20(40%) got relief from the symptoms, and only 13(26%) experienced joint pain at severe level and 12(24%) had at moderate level, and only 5(10%) had mild level.

In group II, 24(48%) of them felt severe level of joint pain and 10(20%) felt at moderate level, 9(18%) of them had at mild level and 6(12%) of them did not feel joint pain in the pretest, whereas in the posttest, 21(43%) felt joint pain severely, 10(20%) had at moderate level and only 6(12%) of them did not experienced joint pain.
In the control group, 28(56%) of the midlife women experienced joint pain severely, 10(20%) of them had moderately, 9(18%) of them had mild level of joint pain and 3(6%) of them did not experience joint pain in the pretest, whereas in the posttest, 25(50%) of them experienced severe level and 8(16%) of them experienced from severe to very severe levels of joint pain.

Table 63 denotes the comparison of physical problems in the posttest among the three groups. Statistically, significant difference was found in mean and standard deviation of somatic problems \((F = 46.638, p<0.001^{***})\) and aches and pain \((F = 59.487, p<0.001^{***})\) among the midlife women in the control, group I and group II.

Further the Least Significant Difference (LSD) multiple comparison test was computed at 95% of confidence interval which revealed that, highly statistically more significant reduction of physical problems such as somatic problems \((\text{LSD} - \text{C,GII}<\text{GI}^{***})\), aches and pain \((\text{LSD} - \text{C,GII}<\text{GI}^{***})\) were identified in group I than in the group II and control group. Further, it was concluded that the multimodal intervention was much better than the EPCI in reduction of physical problems of midlife women.

**Psychological Problems**

Psychological problems are the most bothering factors to women when they step into midlife period. Among the psychological problems the most bothering symptom is mood swing.
Table 38 shows the findings of mood swing in group I, that totally 15(30%) midlife women mood felt swing severely and 12(24%) felt at moderate level, 8(16%) felt at mild level and 15(30%) did not feel mood swing in the pretest. In the posttest most of the midlife women 31(62%) got relief from the symptoms and only 12(24%) of them experienced mild level, 7(14%) of them had moderate level of mood swing.

In group II, a total of 16(32%) felt mood swing at severe level, 12(24%) of them felt at moderate level and 6(12%) experienced at mild level in the pretest, whereas, in the posttest, majority of 21(42%) did not experience mood swing, 15(30%) of them felt at mild level, 11(22%) experienced at moderate level and 2(4%) experienced at severe level.

In the control group, 17(34%) of them experienced severe level of mood swing, 12(24%) midlife women experienced at moderate level, 7(14%) of them experienced at mild level and 14(28%) did not feel mood swing in the pretest, whereas, in the posttest, 15(30%) of them did not experience mood swing, 15(30%) of them experienced at moderate level, 12(24%) of them experienced at severe level, 8(16%) of them experienced in mild level.

Table 64 denotes the comparison of psychological problems in the posttest among three groups. Statistically, significant difference was found in the mean and standard deviation of Mental Exhaustion ($F=8.671$, $p<0.001^{***}$), Depression ($F=11.063$, $p<0.001^{***}$), Irritability ($F=11.778$, $p<0.001^{***}$) and sleep problems
(F= 23.230, p<0.001***) among the group I, group II and control, midlife women in the posttest.

Further the LSD multiple comparison test was computed at 95% of confidence interval which revealed, statistically highly significant decreased reduction of mental exhaustion (LSD – C<GII**, <GI***), depression (LSD-C<GI,GII*), irritability (LSD – GI<C<GII**), sleep problem (LSD - C<GII,GI*) felt by the midlife women in group I and group II than in the control group. It indicates that the multimodal intervention and EPCI had statistically better in reducing the psychological problems.

**Urogenital Problems**

Urinary problems during menopause are often attributed to the dribbling of urine, frequency of urination, incontinence of urination which are associated with declining of estrogen level.

**Table 41** reveals in group I 16(32%) felt dribbling of urine at mild level and 10(20%) felt at moderate level, 6(12%) suffer from severe level, and 18(36%) did not feel dribbling of urine in the pretest. But, in the posttest a majority of 43(86%) did not feel the dribbling of urine and 4(8%) suffer from mild level, and only 3(6%) suffer from moderate level of dribbling of urine.

In group II totally 14(28%) had dribbling of urine at severe level, 10(20%) had at moderate level, 5(10%) had at mild level, and 20(40%) of them did not feel dribbling of urine in the pretest, whereas in the posttest, the proportion of midlife women not
experiencing dribbling of urine increased to 34(68%), 13(26%) of them had a mild level and only 2(4%) of them had moderate level of dribbling of urine.

Regarding the dribbling of urine, in the control group, most of them 17(34%) had severely, 9(18%) of them had mild and moderate level and only 15(30%) of them did not experience in the pretest, whereas in the posttest, 12(24%) did not experience dribbling of urine, 16(32%) suffer from severe level, 12(24%) experience mild level, and 10(20%) of them suffer from moderate level.

The findings of vaginal dryness, in group I, indicate that totally 18(36%) of them felt at severely, 7(14%) of them experienced moderate level, 6(12%) of them felt at mild level and 19(38%) did not feel in the pretest. In the posttest, most of them 36(72%) got relief from the problem and only 8(16%) of them experienced at mild level, 4(8%) of them experienced at moderate level, and only 2(4%) of them at experienced severe level of vaginal dryness.

In group II, a total of 12(24%) felt vaginal dryness at severe level, 8(16%) of them felt mild level, 6(12%) of them felt at moderate level and 23(46%) did not feel in the pretest, whereas in the posttest, 20(40%) of them did not feel vaginal dryness, 11(22%) experienced at mild and moderate level, and 7(14%) of them felt at mild level of vaginal dryness.

In the control group, a majority of 17(34%) midlife women experienced severe level and 24(48%) of them did not experience in
the pretest, whereas, in the posttest, 25(50%) of them did not experienced vaginal dryness, 8(16%) of them experience at moderate level, 7(14%) of them experienced at mild level of vaginal dryness.

**Table 65** denotes the comparison of genito urinary problems in the posttest among the three groups.

- Statistically significant difference was found in the mean and standard deviation of urinary problems \( F = 48.983, \ p < 0.001^{***} \) \( \text{LSD-C<GI,GII**} \), sexual problems \( F = 15.227, \ p < 0.001^{***} \) among the control, group I and group II midlife women in the posttest \( \text{LSD-C<GI,GII***} \).

- **Table 69** shows the finding of ANCOVA analysis after controlling the significant variables. On urinary problems it reveals the changes occurs in the urinary problems in posttest is mainly the influence of interventions (multimodal and EPCI). Further it reveals the LSD results in group I and group II had equally effective in reduction of urinary problems.

Further the LSD multiple comparison test was computed at 95% of confidence interval which reveled,

- Statistically highly significant reduction of urinary problems was experienced by the midlife women in group I than in the control and group II. It indicates that the multimodal intervention and EPCI was found to be effective \( \text{LSD-C<GI,GII**} \).
Cardiac Problems

➢ No significant difference was found among the groups after the interventions.

Thus the first hypothesis (H₁) of the present study was accepted

H₁ :  There will be a significant reduction in menopausal problems after administration of multimodal intervention in group I than group II and control groups.

The findings of the present study were supported by Welty et al., (2014). They assessed the effectiveness of therapeutic life style changes and soy nut consumptions for menopausal problems. The findings revealed that statistically more significant difference was found among the group used therapeutic life style changes (exercise and counseling on stress management techniques) along with soy nut consumption than in the group which used soy nut consumption alone. Reduction of menopausal score was significant at vasomotor p<0.004, psychological p<0.001, urinary p<0.004 and sexual problems p<0.005.

Findings related to comparison of coping ability in pretest among control, group I and group II

Table 67 provides the data about coping ability of the midlife women with menopausal problems in the pretest among the groups I group II and control.

Statistically significant difference was found in mean and standard deviation of active coping ability of midlife women among the groups I, group II and control. The significant difference was
calculated by one way ANOVA test ($F = 6.999, p < 0.001^{**}$). Since the variable active coping ability was found to be statistically significant, it was used as one of the covariate in ANCOVA analysis to compare the post mean values of the three groups.

Table 67 shows the findings of coping ability such as denial, disengagement, religious, seeking social support and planning coping ability among three groups (group I and group II, control) in the pretest. The non significant p value ($p > 0.475, p > 0.818, p > 0.746, p > 0.416$ and $p > 0.528$) indicates that all the three groups were similar with respect to the psychological domains such as denial, disengagement, religious, seeking social support and planning coping ability except active coping ability. Hence the groups are further comparable in those domains.

**Findings related to comparison of coping ability in posttest among control, group I and group II**

Table 68 depicts the statistically significant difference in mean and standard deviation of active coping ability ($F = 54.390, p < 0.001^{***}$), denial coping ability ($F = 2.638, p > 0.075$), disengagement coping ability ($F = 39.060, p < 0.001^{***}$) religious coping ability ($F = 0.703, p > 0.497$), seeking support coping ability ($F = 20.956, p < 0.001^{***}$), planning coping ability ($F = 16.749, p > 0.001^{***}$) among the midlife women in the control, group I and group II, in the posttest. In the posttest active coping ability ($LSD – C < GII < GI^{*}$), disengagement coping ($LSD – C, GII < GI^{*}$), seeking
support coping ability (LSD – C<GII,GI*) and planning coping ability (LSD-C,GII<GI**).

**Table 70** ANCOVA results reveals the difference occur during the posttest active coping was mainly an influence of the interventions not an influence of age. LSD result reveals multimodal intervention was more effective in improving the active coping ability of the midlife women than the others (LSD – C,GII<GI**).

To compare the effects of various interventions, such as multimodal intervention and EPCI on coping ability with menopausal problems analyzed by LSD multiple comparison tests and computed at 95% of confidence interval. The test results as follows:

Statistically, highly significant improvements in active coping ability were found among the midlife women in group I than in the control and group II in the posttest. Further, the LSD multiple comparison test indicated that the multimodal intervention were statistically much better in improving the active coping ability than the EPCI (LSD – C,GII<GI**).

**Thus the second hypothesis (H2) of the present study was accepted**

**H2 :** There will be a significant difference in the coping ability of the midlife women who received multimodal intervention in group I than midlife women who practice EPIC in group II and midlife women in control groups.
The above findings of the present study was supported by the study conducted by Komatsu and Lioka (2014) on the effectiveness of life style intervention (counseling, dietary modification and flexibility exercise) programme to enhance the perimenopausal women’s ability to cope with stress and vasomotor symptoms. The result showed that the changes in coping ability was observed in experimental group p<0.05. Between group comparison result revealed that the lifestyle intervention group shows significant changes in psychological coping ability (disengagement, denial, and seeking social support) p<0.05 except religious coping ability.

**The seventh objective of the study was to assess and compare the biochemical parameters among control, group I and group II**

During the menopausal transition the FSH level increases and the estradiol level decreases. This might be a origin of menopausal symptoms during the menopausal transition. At the same time. The HDL level decreases and the LDL level increases. These biochemical changes during menopausal transition make the midlife women to have major physical and psychological problems. Thus the investigator planned to maintain the balanced stage of biochemical parameters by administering multimodal intervention and EPCI and planned to measure biochemical parameters before and after interventions.
**Table 71 to 74** depicts the comparison between pre and posttest value of biochemical parameters among the control, group I and group II. The biochemical components assessed in this study were FSH, estradiol, HDL and LDL.

**Table 71** depicts the result that there was influence found on FSH level in posttest among the midlife women. The pretest mean score of FSH found in the control group was 86.558 with the standard deviation of 19.785, whereas it was increased to 87.706 with the standard deviation of 20.729 in the posttest and the difference found to be non significant.

In group I, the pretest mean score of FSH found to be 87.358 with the standard deviation of 17.900. In the posttest, it was decreased to 80.310 with the standard deviation of 17.808. The difference was significant at p<0.05.

In group II, the pretest mean FSH value was found to be 82.549 with the standard deviation of 22.328, whereas in the posttest it was increased to 83.623 with the standard deviation of 21.669. The difference was found to be non significant. It shows that the multimodal intervention found to be moderately effective in reducing the FSH level among the midlife women than in other interventions.

**Table 72** shows the analysis of serum estradiol level among the midlife women. In the control group, the pretest mean value of estradiol was 9.362 with the standard deviation of 1.460, whereas
in the posttest, the mean score was slightly decreased to 9.253 with the standard deviation of 1.598. It was found to be non significant.

In group I, the mean pretest value was found to be 9.700 with the standard deviation of 1.500, whereas in the posttest, it was increased to 9.900 with the standard deviation of 0.586. The difference between the test found to be non significant at (p<0.174).

In group II, the pretest mean value was found to be 9.610 with the standard deviation of 1.715 and in the posttest mean value was found to be 9.510 with the standard deviation of 1.615. The difference in the mean value of estrogen found to be non significant.

The finding was consistent with the study of Hooper, et al., (2010) who did a study of effects of soy isoflavones on circulating hormone concentration among the menopausal women. The results revealed that the soy isoflavones significantly (p<0.005) reduces the FSH and non significantly (p<0.07) increase the estradiol level among menopausal women.

**Table 73** showed the comparison of pre and posttest value of HDL among the groups. In the pretest to mean value of HDL in the control group was 43.527 with the standard deviation of 5.270 and in posttest the mean value was 43.127. The value was found to be statistically non significant.
In group I, the mean value was 43.496 with the standard deviation of 4.939 and it was found to be slightly increased to 43.950 with the standard deviation of 5.066. The difference was found to be non significant.

In group II, the pretest mean value of HDL found to be 44.370 with the standard deviation of 5.630 and in the posttest the mean value was 44.382. It was found to be non significant.

Table 74 infers the analysis of comparison of the LDL level in the control group which showed that the mean value was 129.75 with the standard deviation of 23.02 in the pretest whereas in the posttest, the mean value was found increased to 130.15 with the standard deviation of 24.04. The difference between the pretest and post was found to be statistically non significant.

In group I, the pretest mean value was found to be 130.83 with the standard deviation of 8.64 and in the posttest mean value was found decreased to 122.36 with the standard deviation of 9.68. The difference between the group was statistically significant at p<0.001.

In group II, the pretest mean value was 133.92 with the standard deviation of 6.95 and, in the posttest the, mean value was found increased to 134.14 with the standard deviation of 6.82. The difference was found to be statistically non significant.
Thus, the third hypothesis (H₃) of the present study was accepted.

H₃: There will be a significant difference in the biochemical parameters of the midlife women who received multimodal intervention than the midlife women who practice EPCI and midlife women in control group.

The following studies were congruent with the findings made by the present study:

Demlow, et al., (2014) conducted a study on the effects of soy isoflavones on blood cholesterol level among the menopausal women. The findings indicated that the isoflavones diet decreased the LDL cholesterol level by 7.6 to 10.0% (p<0.005).

Hanachi and Golkho (2010) performed a study to determine the effect of soy phytoestrogen and exercise on lipid profile and menopausal symptoms among midlife women. The findings confirm that the soy phytoestrogens and moderate exercise for three months more significantly reduces the LDL cholesterol at (p<0.05) than the control group. It was suggested that the soy phytoestrogen and moderate exercise reduces the LDL level thus it prevents the risk of developing heart disease after the menopause.

Similar findings were found, in the study conducted by Han, et al., (2012) to underline the benefits of soy isoflavones on therapeutic regimen on menopausal symptoms. The findings showed that 25gms of soy daily for three months significantly (p<0.001) reduces the menopausal symptoms, FSH and LDL level.
than the placebo group. But, soy isoflavones did not make any changes on blood pressure, weight and BMI.

Overall multimodal intervention and EPCI was effective in prevention and management than control group and further analysis concluded that multimodal interventions was found to be more effective in the prevention and management of menopausal problems than the EPCI which was found to be significant in selected menopausal problems.