CHAPTER V

DISCUSSION

This chapter deals in detail about the study findings which are interpreted in relation to the objectives, related studies and conceptual framework which are discussed according to the study objectives.

5.1 CHARACTERISTICS OF THE STUDY PARTICIPANTS

5.1.1 Patients with stroke

The characteristics of the study participants are mentioned below: The frequency and percentage distribution of the study demographic variables among patients with stroke in both the groups (Table 4.1) revealed that majority of them 32 (37.6%) were in the age between 41-50 years in the study group and 31 (36.5%) of them were in the age between 41-50 years in the control group. 65 (76.5%) of them were male in the study group and 54 (63.5%) of them were male in the control group. 68 (80%) and 71 (83.5%) of them were married in the study group and control group respectively. 47 (55.3%) & 63 (74%) of them belonged to nuclear family in the study group and control group respectively. Most of the subjects lived in urban area 31 (36.5%) in the study group and 42 (49.4%) in control group. Regarding educational status 23 (27.1%) of them in study group and 21 (24.7%) of them in control group had collegiate level of education.
In relation to the stroke risk factors (Table 4.2), 73 (85.9%) subjects in the study group and 58 (68.2%) of them in the control group suffered from hypertension. 39 (45.9%) and 48 (56.5%) of them had history of diabetes in the study and control group respectively. 27 (31.8%) in the study group and 23 (27.1%) of them in the control group were Ex-smokers. 52 (61.2%) and 34 (40%) of them had family history of stroke in the study and control group patients respectively.

With relation to the clinical variables (Table 4.3), 59 (69.4%) of them had ischemic stroke and 26 (30.6%) of them suffered from hemorrhagic stroke in study group whereas 61 (71.8%) of them suffered from ischemic stroke and 24 (28.2%) of them had suffered from hemorrhagic stroke in the control group. Regarding neurological deficit majority of them had weakness on one side of the body in both the groups.

5.1.2 Caregivers of patients with stroke

The description of the background variables of the caregivers of the patient with stroke (Table 4.4), revealed that 67 (78.8%) subjects in study group and 66 (77.6%) subjects in the control group were female. Data related to occupation showed that, 61 (71.8%) subjects in the study group and 59 (69.4%) subjects in control group were housewives. Regarding relationship with the patient, 66 (77.6%) of them in the study group and 64 (75.3%) in the control group were spouse. Related to prior experience as caregiver, only 19 (22.4%) in the study group and 18 (21.2%) in the control group had prior experience.
5.2 EFFECTIVENESS OF CSEP ON KNOWLEDGE OF STROKE AMONG PATIENTS WITH STROKE

The present study data revealed 84 (98.8%) of patients in the study and 85 (100%) of them in the control group had inadequate knowledge in pretest. After participating in CSEP, there was an increase in the number of subjects in moderately adequate knowledge category 71 (87.6%) in the study group whereas in control group 65 (83.3%) of them were in the category of inadequate knowledge during posttest III. This explained that CSEP profoundly improved the knowledge on stroke among study group patients (Table 4.5).

The above findings are supported by a study conducted by Reeves, Hogan & Rafferty (2002). The researchers assessed the knowledge on stroke risk factors and warning signs among Michigan adults with 2500 population and reported that 80% of the people reported at least one stroke risk factor, 28% of them reported three risk factors. Most frequently identified risk factor is hypertension. 14% of them pointed to the three warning signs and 69% of them mentioned only one correct warning sign. Most frequently mentioned were sudden numbness (46%) and the other slurred speech and disoriented (30%) One in five respondents were not aware of stroke risk factors and almost one in three was not aware of any stroke warning signs.

A similar study executed by Stephanie, P. Jones, Amanda, J. Jenkinson, Michael, J. Leathley & Caroline, L. Watkins (2010) supports the current study. The researchers did a review on stroke knowledge and awareness and reported that 18-
49% of them named one risk factor in open ended question and 42-97% of them answered it in closed ended question. 25 to 72% of them were able to name one symptom in open ended questions, 95 to 100% of them mentioned in closed ended question. People generally obtained information about stroke from family and friends. Generally level of knowledge about recognizing and preventing stroke were poor.

Comparison of mean scores of knowledge on stroke between the study and control groups during pretest, posttest-I, II & III revealed that, there was no statistically significant difference in the pretests mean score of 6.61 in the study group and 6.87 in the control group. The posttest scores were 13.21 and 7.84 during posttest-I, 13.05 and 8.09 in posttest-II, 12.75 and 8.13 in posttest-III in the study and control group respectively. The mean scores were higher in the study group than in the control group during the posttest-I, II & III which was statistically significant at p<0.001 (Table 4.8).

These study findings are consistent with the results of Green, Haley, Eliasziw & Hoyte (2007) who examined the application of motivational interviewing and stages of change on stroke knowledge acquisition and changing individual lifestyle risk factors in an outpatient clinic through the RCT in which 200 participants were allocated to an education-counselling interview (ECI) or a control group. There was a statistically significant difference between the groups from baseline (T1) to three months (T3) in stroke knowledge (p<0.001).
Comparison of knowledge on stroke within the study group using paired t test also showed improvement in the knowledge which was statistically significant at p<0.001. The mean score (Table 4.6) of knowledge on stroke in the study group were as follows, pretest: 6.61, posttests-I, II & III - 13.21, 13.05 & 12.75. The posttests scores were higher compared to pretest which implied that CSEP improved the knowledge on stroke among study group patients.

A study conducted by Mant, Carter, Wade & Winner (1998) to assess the impact of an information pack on patients with stroke and their carers by randomized controlled trial among patients who got admitted with acute stroke and informal carers of those patients were included. The intervention group received an information pack containing various stroke association publications that was delivered for one month after the discharge from the hospital and the results showed that the patient and the carers in the intervention group tend to know more about stroke but the difference was not significant. The findings showed that information leaflets could lead to improved knowledge about stroke.

In the present study, statistically significant differences were found over a period of the study (pretest, posttests-I, II & III) with knowledge on stroke at p< 0.001 (F = 125.51) between the study and control group patients (Table 4.9).

The influence of knowledge and belief factors, self-regulation skills and abilities and social facilitation as stated in the conceptual framework of this study were transparent that the knowledge on stroke showed good improvement after CSEP that helped the patient to engage in self-management of stroke. The findings

The improvement in knowledge of stroke and the presence of statistically significant differences between the groups and within the study group following the CSEP, have directed the investigator to accept the formulated hypotheses (H1): “there is a significant difference in knowledge of patients with stroke who participate in CSEP than those who do not”.

5.3 EFFECTIVENESS OF CSEP ON QUALITY OF LIFE IN THE FOLLOWING ASPECTS: ADL, GENERIC AND STROKE SPECIFIC QUALITY OF LIFE AMONG PATIENTS WITH STROKE

5.3.1 ADL

The frequency and percentage distribution of level of ADL (Table 4.10) among study and control group patients revealed that 44.7% of them in the study and 37.6% of them in the control group were in need of minimal help to meet their activities of daily living in pretest. After participating in CSEP, majority (86.5%) of them in the study group were independent to meet their ADL during posttest-III whereas in control group only 42.5% were in the category of independent to meet their ADL in posttest-III.

Green & King (2010) took a descriptive study to examine the functional outcomes, quality of life (QOL), depression, caregiver strain, and marital function in
a prospective cohort of male survivors of mild stroke and their wife-caregivers during the 12 months post discharge. A total of 38 male patients (mean age 63.4 years) and their wife-caregivers (mean age 58.5 years) were examined. None of the measured variables were associated with marital functioning 1 year post discharge, despite improvement in patients' functional status.

The independent t test (Table 4.13) results revealed that the mean scores of ADL in the study group (79.06, 81.29 & 81.76) and in the control group (79.06, 81.35 & 81.63) during posttest-I, II and III and was statistically significant at p< 0.05 level.

The findings of the present study are similar with the results of another study conducted by Yoo, I.G. & Yoo,W.G. (2011) on effect of multidisciplinary supervised exercise program on motor performance and quality of life in community-dwelling chronic stroke survivors. In this study the effectiveness of two exercise regimens was assessed that are 24 week multidisciplinary supervised exercise program and 24 week self-monitored conditioning exercise program. Twenty-eight subjects (17 men and 11 women) were allocated to take part in either a multidisciplinary supervised program or a self-monitored exercise program. Both groups showed improvement in motor capacity and quality of life, but the improvements achieved by the multidisciplinary supervised group were greater than those of the self-monitored group. A multidisciplinary supervised program was more effective than a self-monitored program for stroke rehabilitation.
A study by David Saunders, Miriam Brazzelli, Carolyn Greig & Gillian Mead (2011) determined whether fitness training (cardiorespiratory or strength, or both) after stroke reduced death, dependence and disability among stroke survivors through a randomized controlled trial. 1147 participants, comprised of cardiorespiratory (11 trials, 692 participants), strength (four trials, 158 participants) and mixed training interventions (nine trials, 360 participants) were included. Death was infrequent at the end of the intervention (1/1147) and follow up (8/627). No dependence data were reported. Diverse disability measures made meta-analysis difficult; the majority of effect sizes were not significant. Cardiorespiratory training involving walking, improved maximum walking speed (mean difference (MD) 6.47 meters per minute, 95% confidence interval (CI) 2.37 to 10.57), walking endurance (MD 38.9 meters per six minutes, 95% CI 14.3 to 63.5), and reduced dependence during walking (Functional Ambulation Categories MD 0.72, 95% CI 0.46 to 0.98). There is sufficient evidence to incorporate cardiorespiratory training, involving walking, within post-stroke rehabilitation in order to improve speed, tolerance and independence during walking.

The comparison of mean score ADL within study group (Table 4.11) during pretest, posttest-I, II, & III showed that the posttest-III (81.76) mean score of ADL was higher than the score of pretest (76.24) and calculated t values were statistically significant at p<0.001. This indicates that CSEP participants improved better in their functional ability following stroke.

Wang, Camicia, Terdiman, Hung & Sandel (2011) evaluated a retrospective cohort study which analyzed the association of time to inpatient
rehabilitation hospital admission and functional outcomes of patients who have had a stroke at regional IRH, USA. Moderately (n = 614) and severely (n = 1294) impaired patients who had a stroke who were admitted to the facility between 2002 and 2006. Change in total, motor, and cognitive Functional Independence Measure (FIM) scores between IRH admission and discharge were taken into consideration. After controlling for patient demographics and initial medical conditions and functional status, shorter periods from stroke onset to IRH admission were significantly associated with greater functional gains for these patients during IRH hospitalization. Moderately impaired patients achieved a greater total FIM gain when admitted to an IRH within 21 days of stroke. Severely impaired patients showed a gradient relationship between time to IRH admission and total FIM gain, with significantly different functional gain if admitted to an IRH within 30 and 60 days after stroke diagnosis. Earlier transfer to an IRH may lead to better functional improvement after stroke. However, certain factors such as age, race/ethnicity, initial medical conditions and functional status, and length of stay at an IRH also contributed to functional gain.

The results of the present study imply that the comprehensive stroke education programme improves the functional ability of the patients following stroke by adopting specific skills in meeting their personal ADL.

5.3.2 Generic quality of life

The present study data revealed that the comparison of mean score of PCS (Table 4.19) between the groups revealed that during pretest in the study group PCS
score 35.63 and in the control group was 35.68. The mean scores during posttest-I, II & III in the study group 43.67, 44.53 & 46.53 and in the control group 42.98, 43.87 & 44.76 respectively. The t-values obtained during posttest-III (2.542) showed a statistically significant difference at p<0.05.

The results of comparison of PCS mean score within the study group(Table 4.17) explained that the mean score in the pretest was 35.63; after implementing CSEP there was a significant increase in the physical component summary score in the posttest-I, II & III (43.67,44.53 & 46.53) at p<0.001 level.

The comparison of PCS mean score within the control group (Table 4.18) explained that the mean score in the pretest as 35.68 and in posttest-III it improved to 44.76 which was statistically significant at p<0.001 level.

Such similar results were noticed in a study conducted by Akosile, Okoye, Nwankwo, Akosile & Mbada, C.E. (2011) aimed at determining the quality of life (QOL) of stroke survivors in a Nigerian population using a survey method SF-12 questionnaire in selected tertiary health centres. Being a woman close relative is associated with lower mental health scores while being an older close relative contributed to lower physical health score (p<0.05). Stroke survivor’s scores on the physical and mental health domains correlated moderately with each other (r = 0.52) and low with their overall QOL scores (r = 0.41 and 0.48).

The comparison of overall mean score of MCS between the groups (Table 4.23) revealed the score during pretest in the study group to be 34.41 and in the control group to be 41.11. The mean scores during posttest-I, II & III in the study
group were 38.85, 38.63 & 45.93 and in the control group were 39.61, 36.85 & 34.47 respectively. The t-value obtained during posttest-III (9.931) showed a statistically significant difference at p<0.05.

In the present study, the MCS score within the study group during pretest was 34.41 (Table 4.21) whereas after implementing CSEP the mean score during posttest-I, II & III was 38.85, 38.63 & 45.93 and the paired t value was statistically significant at p<0.001 level in different periods of time in posttest-I, II & III respectively.

In the present study, statistically significant differences were found over a period of the study (pretest, posttest-I, II & III) with overall MCS score at p< 0.001 (F = 59.527) between the study and control group patients (Table 4.24).

A study executed by Froes, Valdés, Lopes Dde & Silva, C.E. (2011) aimed to assess the health-related quality of life (HRQoL) among adults with stroke sequelae and to identify the factors that influenced the domains of HRQoL in Sarah Network of Rehabilitation Hospitals. They were investigated using the Medical Outcomes 36-Item Short-Form Health Survey (SF-36), Functional Independence Measure (FIM) and Beck Depression Inventory (BDI). Sixty-four adults of mean age 58.8 years were evaluated. The individuals who had had their injuries for longer times and who were more independent and younger had better HRQOL regarding physical functioning. Social participation was associated with better HRQOL.
HRQOL was compromised primarily with regard to functional characteristics. Rehabilitation needs to focus on improving functionality and social participation, which may improve the HRQOL.

Marco, E., Duarte, E., Santos, J.F., Aguirrezabal, A., Morales, A., Belmonte, R., et al. (2010) highlighted the negative impact on the health related quality of life (HRQOL) among stroke patients at Hospitals Mar-Esperance, Spain. Transversal study of 215 stroke survivors (1:3 man/woman, mean age 63.6 (±11.03) years). Vitality and general health were the most affected dimensions perceived by stroke patients. In comparison with the Spanish general population, female stroke survivors aged 45-54 years presented a significant reduction in the SF-36 subscales of vitality (p = 0.003), social function (p = 0.01), emotional role (p = 0.038) and mental health (p = 0.002). Male stroke survivors did not present significant lower HRQOL.

Wilima Hopman & Jane Verned (2003) conducted a prospective study on quality of life during and after inpatient stroke rehabilitation program. 85 patients were followed during and after discharge from the hospital. Over a period of three years and the HRQOL was assessed by means of SF-36 and the HRQOL were assessed 6 months after discharge and the result revealed an improvement in all the eight domain with five attaining statistical significance that is role emotion, mental health, social functioning, bodily pain, and general health perception. They
suggested for longitudinal study to ensure that adequate community services and support are available.

### 5.3.3 Stroke specific quality of life

The independent t-test revealed the overall mean scores of SSQOL (Table 4.32) in the study group (163.53, 179.98 & 181.40) to be higher than that in the control group (163.61, 171.76 & 173.52) during posttest-I, II & III and the calculated t-values during posttest-II and III showed the presence of statistically significant difference at p<0.01 between the groups.

Comparison of overall mean score of SSQOL (Table 4.30) within the study group revealed an improvement in posttest-III (181.40) than posttest-I which was statistically significant at p<0.001. This proves that CSEP helps the patients to gain better quality of life following stroke.

The comparison of 12 domains mean scores of SSQOL between study and control group (Table 4.29) during posttest-I, II & III of energy, mobility, mood, social role and work/productivity showed a high score in the posttest-III (9.07, 25.78, 13.78, 13.61 & 11.05) than in the posttest-I (8.26, 8.72, 23.31, 12.88 & 10.76) and those differences were statistically significant at p<0.001 in study group than in control group. Personality, upper extremity functions and vision were statistically significant at p<0.01 and language at p<0.05.

In the present study, comparison of 12 domains mean score of SSQOL (Table 4.27) with in the study group patients during posttest-I & III of energy,
language, mobility, self-care showed a statistical significance at p<0.001, family role, social role and thinking at p<0.01 and mood and work at p<0.05 level.

In the current study statistically significant differences were found over a period of time on the measurement of overall domain score of SSQOL (Table 4.33) from the posttest-I to posttest-III between the study and control group patients at p< 0.001(F=59.527).

Orest Marianne (2000) neurology report investigated the self-care, self-efficacy quality of life depression and functional independence and the relationship among these areas for people one and six months post stroke at PT Fletcher Allen Health Care Medical Center Hospital of Vermont Campus, Burlington. Findings pointed out a positive relationship between self-care self-efficacy and quality of life at one month and 6 months post-stroke as demonstrated by an increase in both self-care, self-efficacy and quality of life. The quality of life and function independence were high at 6 months but not at one month post-stroke. The result suggested that the health care provider need to take an active role in promoting self-efficacy for patients who have had stroke.

The study findings were supported by a study conducted by Larson, J., Franzen-Dahlin, A., Billing, E., Arbin, M., Murray, V., Wredling, R.J, et al. (2005). The researchers determined the impact of a nurse led support and education program for spouses of stroke patients, a randomized controlled trial, with 50 patients in each group, participated six times in 6 months led by a stroke specialist nurse. Findings revealed that intervention group had significant decrease in negative wellbeing and
increased quality of life over a period of time whereas control group showed significant decrease in negative and general wellbeing. A support and educational program might have positive effect on spouse’s wellbeing.

The process dimension as stated in the conceptual framework of this study showed a consistent improvement in functional ability and quality of life of patient following stroke after CSEP that resulted in adopting self-management behavior following stroke (Polly Ryan and Kathleen J. Sawin, 2008).

The results of the present study related to aspects of quality of life transparently pointed that comprehensive stroke education program promotes the ADL, generic and disease specific quality of life of patients following stroke. Hence, the stated hypotheses (H2, H3 & H4) were accepted. The hypotheses were

- There is significant difference in ADL of patients with stroke who participate in the CSEP than those who do not.

- There is a significant difference in generic quality of life among patients with stroke who participate in the CSEP than those who do not.

- There is a significant difference in stroke specific quality of life of patients with stroke who participate in the CSEP than those who do not.
5.4 EFFECTIVENESS OF CSEP ON KNOWLEDGE OF STROKE AMONG CAREGIVERS OF PATIENTS WITH STROKE

The present study data (Table 4.34) on level of knowledge on stroke among study and control group caregivers showed that 77 (90.6%) of them in the study and 74 (87%) of them in the control group caregivers were in the category of inadequate knowledge during pretest. After participating in CSEP, there was an increase in number of subjects in moderately adequate 69 (87.3%) category in the study group whereas in control group 65 (83.3%) were in the category of inadequate knowledge during posttest-III. This explains that CSEP profoundly improved the knowledge on stroke among study group caregivers.

The comparison of knowledge on stroke between the study (11.46, 11.68 & 11.52) and control group caregivers (7.42, 7.58 & 7.48) during posttest-I, II & III respectively, show the mean score to be higher in the study group than the control group caregivers during posttests which was statistically significant at p<0.01 level (Table 4.37).

These findings are supported by the results of Bakas, T., Farran, C.J., Austin, J.K., Given, B.A., Johnson, E.A., Williams, L.S, et al. (2009) aimed to assess the knowledge of stroke caregiver outcomes through Telephone Assessment and Skill-Building Kit (TASK) in Indiana University School of Nursing, guided by a conceptual model, 6 outcomes (optimism, task difficulty, threat appraisal, depressive symptoms, life changes, general health perceptions) were measured in 40 caregivers randomized to the TASK (n = 21) or an attention control group (n = 19). Significant
increases in optimism at 4 weeks, 8 weeks, and 12 weeks were found, with medium effect sizes for the TASK group relative to the control group (p<0.05). Significant improvements in task difficulty at 4 weeks, and threat appraisal at both 8 weeks and 12 weeks were also found (p<0.05). Caregivers receiving the TASK intervention improved their knowledge of stroke in optimism, task difficulty, and threat appraisal.

The study findings of mean score of knowledge on stroke within the study group caregivers during the pretest was 6.35. After the implementation of stroke education program there was a significant increase in mean score of knowledge on stroke during posttest-I, II and III (11.46, 11.68 & 11.52) which was statistically significant at p<0.001 level (Table 4.35).

A study conducted by Choi, Seo & Kwon (2006) to assess the effects of education on knowledge and practice of caregivers of the stroke patient in Gyeongsang National University Hospital, China using a non-equivalent control group non-synchronized design. Forty caregivers, twenty in the experimental group and twenty in the control group were assigned. The experimental group participated 2 times in an education class given by the researcher. Knowledge (t = 5.87, p = 0.00) and practice (t = 5.53, p = 0.00) of the experimental group were significantly different from the control group. The stroke patient care education developed in this study showed a significant promotion of knowledge and practice of caregivers.
In the present study, statistically significant differences were found over a period of the study (pretest, posttests-I, II & III) with knowledge on stroke at p< 0.001 (F = 20.581) between the study and control group caregiver (Table 4.38).

The influence of knowledge and belief factors, self-regulation skills and abilities and social facilitation as stated in the conceptual framework of this study paved the way to improve the knowledge on stroke after CSEP that helped the caregiver to engage in self-management behavior in taking care of patient with stroke. The findings are similar to that by Polly Ryan and Kathleen J. Sawin’s (2008) “The Individual and Family Self - Management Theory”.

The improvement in knowledge on stroke and the statistically significant differences between the groups and within the study group following the CSEP, have directed the investigator to accept the H5 - “There is a significant difference in knowledge of caregivers of patient with stroke who participate CSEP than those who do not”.

5.5 EFFECTIVENESS OF CSEP ON BURDEN AMONG CAREGIVERS OF PATIENTS WITH STROKE

The current study findings on the level of burden experienced by the caregivers (Table 4.39) revealed that during posttest-I 45 (53%) in the study and 57(67.1%) in the control group were in the category of mild to moderate burden whereas in posttest- III, 50 (63.2%) in the study group were in the category of mild to moderate burden and 30 (38.5%) of them in the control group were in the category of moderate to severe burden. No one was found in the category of severe
burden in the study group whereas in control group 5 (5.7%), 7 (8.4%) and 6 (7.7%) had experienced severe burden in taking care of patient with stroke during posttest-I, II & III.

William, E. Haley, Jessica, Y., Allen, B.A., Joan, S. Grant, Olivio, J. Clay & Martinique Perkins et al. (2009) determined the prevalence and stressfulness stroke-related problems, and perceived benefits of caregiving among caregivers of stroke survivors. Stroke survivors (N = 75) and their family caregivers were followed. Caregivers were given a comprehensive telephone interview 8 to 12 months after the stroke, using measures of stroke patient problems, caregiver appraisals of the stressfulness of these problems, and perceived benefits of caregiving. Caregivers rated patient problems with mood (depression, loneliness and anxiety), memory, and physical care (bowel control), as the most stressful, but reported that the prevalence of these problems was lower than those reported previously in studies using clinical samples. Caregivers also reported many benefits from caregiving, with over 90% reporting that caregiving enabled them to appreciate life more.

The comparison of burden between the study and control group caregivers (Table 4.42) revealed that mean burden scores were 29.94 and 35.21 during posttest-I, 31.12 and 36.86 during posttest-II, 32.69 and 36.96 during posttest-III in the study and control group respectively. The mean scores were higher in the control group caregiver than the study group caregiver during the posttests and were statistically significant at p<0.01 level during posttest-I & II and p<0.05 level during posttest-III.
The study findings of comparison of burden within the study group caregiver (Table 4.40) using paired t test showed that the post intervention mean burden score during posttest-I, II & III were 29.94 of 31.12, & 32.60 respectively; all these three scores indicate that the study group caregivers were in the category of mild to moderate burden. The mean difference during posttest-I & III were statistically significant at p<0.01 level.

Nir, Greenberger & Bachner (2009) aimed to examine the changes in caregivers' burden, physical and emotional health, social support network, and quality of life (QOL) during the first 6 months after the stroke occurrence among primary caregivers of stroke survivors. Primary caregivers (N = 140) were assessed at three intervals during this period: within 2 weeks after the stroke occurrence, in the geriatric rehabilitation ward, and at 3 and 6 months post stroke in the community. Results of the study revealed that during the 6-month period, caregivers' physical health remained stable. After 3 months, depression levels decreased, as did the need for instrumental support in and outside the home. Burden decreased consistently at 3 and 6 month intervals. After 6 months, perception of health and QOL improved, whereas the other variables remained stable. These results indicate that overall that population of caregivers adapted to their role over the 6 month period. The results of the study contribute to nurses ability to identify caregivers at risk and develop appropriately timed interventions for empowering caregivers in their role fulfillment.

The comparison of burden (Table 4.41) within the control group caregiver using paired t test also showed marked elevation in the burden score during
posttest-I, II & III as 35.21, 38.92 & 40.37 respectively, all these three scores indicate that the control group caregivers were in the category of upper level of mild to moderate burden and the mean differences were statistically significant at p< 0.001 level. These control group caregivers were likely to get depression and other complications due to high level of burden.

The comparison of burden between the groups over a period of time from posttest-I to posttest-III (Table 4.43) showed improvement in each test than the previous test in both the group caregivers but increase in mean score between the groups showed an increase in burden in the control group than the study group caregivers which was statistically significant at p<0.001 (F = 17.263).

The influence of process dimension as stated in the conceptual framework of this study has directed the caregiver to reduce their burden in taking care of the patient with stroke after CSEP which also helped the caregiver to engage in self-management behavior in taking care of patient with stroke. The findings are supported by Polly Ryan and Kathleen J. Sawin’s (2008) “The Individual and Family Self-Management Theory”.

The study findings evinced that Comprehensive Stroke Education Programme was effective in reducing burden among caregivers of patients with stroke. Thus the investigator accepted the formulated hypothesis (H6): There is a significant difference in burden of caregivers of patient with stroke who participate in CSEP than those who do not.
5.6 ASSOCIATE THE SELECTED BACKGROUND VARIABLES WITH KNOWLEDGE AND QUALITY OF LIFE AMONG PATIENTS WITH STROKE

5.6.1 Knowledge with demographic variables

The association between pretest level of knowledge on stroke with demographic variables of the study group patients did not possess any statistically significant association with age, gender, educational status, occupation, marital status, residence, total family income and type of family (Table 4.44).

5.6.2 Knowledge with clinical variables

There was no association between pretest level of knowledge with the clinical variables among the study group patients with stroke risk factors, stroke subtype and neurological dysfunctions (Table 4.45).

5.6.3 ADL with demographic variables

There was an association between the pretest ADL with family monthly income which was statistically significant at p<0.05 and there was no association with other demographic variables among the study group patients (Table 4.46).

5.6.4 ADL with clinical variables

There was an association between the neurological dysfunction with pretest ADL which was statistically significant at p < 0.001. There was no
association found between the pretest ADL with the stroke risk factors and stroke subtype (Table 4.47).

5.6.5 Generic quality of life with demographic variables

There was no association between the pretest generic quality of life with the demographic variable of the patient such as age, gender, educational status, occupation, marital status, residence, total family income and type of family among the study group patients (Table 4.48).

5.6.6 Generic quality of life with clinical variables

There was no association between the pretest generic quality of life with the stroke risk factors, type of stroke and neurological dysfunction among the study group patients (Table 4.49).

5.7 ASSOCIATE THE SELECTED BACKGROUND VARIABLES WITH KNOWLEDGE AND BURDEN AMONG CAREGIVERS OF PATIENTS WITH STROKE

5.7.1 Knowledge with background variables

There was no association between the pretest level of knowledge on stroke with the background variables such as age, gender, educational status, occupation, marital status, kinship with the patient and prior experience as caregiver among the study group caregivers of patients with stroke (Table 4.50).
5.7.2 Burden with background variables

There was no association between the posttest-III level of burden with the background variables such as age, gender, educational status, occupation, marital status, kinship with the patient and prior experience as caregiver among the study group caregivers of patients with stroke (Table 4.51).

Thus, the study findings matched with the factors discussed in the conceptual framework such as the dyads improved their self-management behavior which included regular medication intake, regular follow-up, and prevention of post stroke complications that led to better quality of life among patients with stroke and reduced the burden among caregivers of patients with stroke.

5.8 LIMITATIONS

1. The investigator and the study participants were aware of the group. Hence, there was a possibility of effect of treatment in which the investigator had no control.

2. The investigator had no influence on the social factors contributing to their healthy behavior such as smoking, control of risk factors among patients with stroke.

3. The study and control group were from the same setting hence there was a possibility of contamination of samples.

4. The investigator had no control over the information related to stroke received by the dyads from other sources. This might have had an effect on the outcome variables. The presence of control group helped to overcome such biases.

5. The sample size was varied due to attrition. The causes of attrition were readmission and family commitment was unavoidable.