

## **CHAPTER-V**

### **DISCUSSION**

In this chapter investigator basically discusses the outcome of the study, as well as ties together loose ends of the study. Present study outcome has been discussed according to sociodemographic variables and as per outcome of objectives of this study. The study investigated 100 samples, to determine the impact of Nurse Led Cognitive Stimulation Program (NLCSP) on cognitive functions and quality of life among elderly in the selected villages of District Panipat, Haryana.

The outcome of this study is discussed under the following section headings:

1. Sociodemographic variables of elderly.
2. Exploration of the problems related to the declining cognitive functions among elderly by them and their care givers.
3. Developed Nurse Led Cognitive Stimulation Program (NLCSP).
4. Effectiveness of Nurse Led Cognitive Stimulation Program (NLCSP) on cognitive functions among elderly.
5. Effectiveness of Nurse Led Cognitive Stimulation Program (NLCSP) on Quality of Life among elderly.
6. Correlation between cognitive functions and quality of life among elderly in the selected rural community
7. Association between cognitive functions, quality of life and selected demographic variables among elderly in the selected rural community

## **1) Socio-demographic variables of the elderly**

Out of 100 elderly participants each group was having 50 participants more than half (58%) of the subjects were in the age group of 65-70 years in intervention whereas in non-interventional category, majority of them (44%) were in age group of 60-65 years. The average age of the control group samples was 65.3% and for treatment group was 66.44%. The outcome result in this regard was identical to the research done by Gurung and Upender who reported average age (61.9%) in non-study and (68.2%) in treatment group.<sup>81</sup>

Regarding gender, in both groups, maximum samples were of male gender, that was 76% in interventional and 52% in non-interventional group. Current findings in this regard were consistent with those of Spector et al., where majority of the study members were male in both groups, as 61% and 54% in interventional and non-interventional groups respectively.<sup>14</sup> In contrast, Park et al. observed that majority of the study population (71%) were female with regard to gender.<sup>76</sup>

According to their educational status, most of elderly (48%) in treatment group were primary educated, whereas, in non-treatment group majority (38%) of elderly were non-literate. This was somewhat similar to Gurung and Upender who reported that 52% in treatment group had primary level education and 48% of them had no formal category of education.<sup>81</sup> The outcomes were also parallel with that of Isabel et al., who in their study showed that most of the participants (92.6%) in the treatment group, were having primary education status.<sup>99</sup>

In the current study, it was noted that most of gold agers in both groups (70%) were married. The current study outcome was parallel with the outcome observed by Lee and Kim as they also point out that in both groups majority of the elderly were married

within experimental (61.1%) and in control group (61.8%). Additionally, this finding was parallel with the observation made by Orell et al. and Aguirre et al. in their studies where most of the elderly in both the groups were married. Basically, the marital status outcome reported in the present study was consistent to that of other studies.<sup>67, 88,100</sup>

Majority of study members belonged to joint family in both the groups, i.e., 64% and 72% in treatment and non-treatment groups, respectively. This outcome was similar to the findings of Lee and Kim, where majority of the study samples were having joint family system in the both groups (59% and 67% in treatment and non-treatment group, respectively).<sup>100</sup>

Regarding outcome related to availability of any care giver, in the current study it was identified that most of gold agers (90%) were having caregivers and none of them (100%) had any previous exposure to such training program as NLCSP, in both the groups. This current outcome goes parallel with that shown by Hall et al. where both the groups were having primary caregivers (71% and 73%) in treatment and non-treatment groups, respectively.) Also, the present outcome in this regard shows consistency with the results of Aguirre et al. where both the groups, in majority, were having caregiver as (81% in experimental and 83% in control group, respectively).<sup>88,89</sup>

## **2) Exploration of the problems related to the declining cognitive functions among elderly by them and their care givers**

In present study reported experience was that declining cognitive functioning was an age-related process which has adverse impact on the elderly's as well as on their caregiver's life. This decline made them partially dependent on the care giver. The findings of the present study also demonstrate that decline in cognitive ability is

increased with age, due to which a number of problems build up. Various studies supported this finding.

Kumar et al. carried out a home-to-home community-based survey and they estimated that the prevalence of cognitive impairment in elderly was high, which they declared was an age-related process.<sup>35</sup> This supports the results of the first phase of the current investigation.

Outcomes were further similar with that of a qualitative study, which was basically an exploratory focused group discussion, done by Jones et al. among elderly on experience of falling cognitive ability and their attitude regarding its prevention. Similarly with the result of the present study, they too identified that knowledge related to falling decline was limited which, they considered as an age-related process, and this decline in cognitive status only led to concern, misery, and fear which ultimately becomes a reason for a stressful family relationship.<sup>94</sup>

Outcome of the present research were also consistent with a work done by Murman, who reviewed and assessed the influence of age on cognition and stated that with age there is acceleration in the process of cognitive impairment. This is considered to be an age-related phenomenon and those who have this decline become functionally dependent on family which impairs daily life of both the affected elderly and their care givers.<sup>95</sup>

A mixed method approach with quantitative survey and qualitative Focus Group Discussion done by Dongre and Deshmukh on various factors which determine the quality of life of old persons residing in rural communities of India corroborates the results of the present study. They also stated in their findings that decrement in cognitive

abilities is responsible for disturbing the personal and social abilities of gold agers which also hastens a lowering of their quality of life.<sup>96</sup>

As per results of the study, researcher has proven that decline in cognitive abilities is problematic for the elderly and for their caregivers. This was similar to the work done by Deary on cognitive decline and its association with the age. In their study they differentiated normative aging and non-normative cognitive aging and came to the same conclusion.<sup>97</sup>

In addition, a similar Focus Group Discussion was done by Ceremnych to locate or explore factors which have an impact on the quality of life in elderly and their caretakers with its relationship to ageing. All participants of the discussion agreed that decline in cognitive health affects their personal as well as social life. Also, they acknowledged about disturbance in family relationship because of these declined cognitive abilities.<sup>98</sup>

### **3) Developed Nurse Led Cognitive Stimulation Program (NLCSP)**

In the present study, the Nurse Led Cognitive Stimulation Program (NLCSP) was formulated on the basis of review of literature and training received from “Shanti Home” rehabilitation center, Greater Noida. The NLCSP was used as an intervention in the study to build up cognitive functions and quality of life among gold agers. This intervention program was having various activities including physical exercises, cognitive functions stimulating activities, tasks, games, and discussion, with aims to refine and build the cognitive functions in elderly. The intervention had 14 sessions for 7 weeks which have been delivered biweekly to the study participants.

Consistent work was done by Gomez et al., who in their study, evaluated the role of cognitive stimulation therapy on mild cognitive impairment and stated that cognitive

stimulation therapy was one of the non-pharmacological approaches which had favorable impact on decline in cognitive functioning of elderly. They recommended the cognitive stimulation program for 7-10 weeks.<sup>99</sup>

Similar study by Lee and Kim, suggested delivery of a cognitive stimulation program as they underwent a longitudinal study on aging with purpose of identifying those activities which can lessen the decline in cognitive fall, and they too, supported the cognitive stimulation program.<sup>100</sup>

Present study cognitive development program also has similarity with the research of Morley et al.. They developed a manual of cognitive stimulation therapy program and recommended development of an organized, structured simple program with sessions that include activities and tasks related to various components, and also have impression on cognitive abilities and quality of life.<sup>101</sup>

#### **4) Effectiveness of Nurse Led Cognitive Stimulation Program (NLCSP) on cognitive functions among elderly**

In the investigator's present study, findings related to the cognitive functions score exhibits that mean post-test cognitive functions score increases from baseline (19.1±2.48) to immediate (22.1±1.92) with a further slight increase at 3 months (23.0 ±1.73) and 1 year (23.4 ±1.71) follow up within the experimental group. Also, analysis by repeated measure ANOVA within experimental group (F 85.51) proved statistical difference at p<0.001. While comparing regarding cognitive functions score between the groups, unpaired t test was used, and the calculated t values for post-test 1 (9.26), post-test 2 (11.97) and post-test 3 (11.91) show significant differences at p<0.001 level of significance.

Similarly, in the research done by Gurung and Upendra on efficacy of cognitive stimulation therapy on cognitive functioning, outcomes were found to be consistent with the present study. The t-test values were computed by them to be 3.82 ( $p < 0.05$  level) favoring the efficacy of cognitive stimulation program.<sup>77</sup>

In respect of present study, the outcome was supported by the results obtained by Park et al. They tested the ability of a cognitive stimulation program on cognitive functioning and their outcome values at,  $p < 0.001$ ) proves the efficiency of cognitive stimulation program in building up the cognitive abilities among elderly.<sup>78</sup>

The present research outcome results were also supported by Herrea et al., who in a research project on potency of cognitive stimulation program on improvement in cognitive ability, observed a difference in interventional and non-interventional group ( $p < 0.045$ ) in unpaired-t test and also in paired t test values ( $p < 0.005$ ) showing a significant difference.<sup>102</sup>

Findings of the study were favored by a randomized controlled trial study carried out by Cheung et al. with the goal to assess benefits of cognitive stimulation therapy on elderly having decline in cognitive abilities. They gave this intervention for 10 weeks for a total of 20 sessions. The outcome of the investigation proved and supported cognitive stimulation therapy's benefits on cognitive functions and also validated its economic advantages.<sup>67</sup>

##### **5) Effectiveness of Nurse Led Cognitive Stimulation Program (NLCSP) on quality of life among elderly**

The present study showed that the mean post-test score of quality of life increases from baseline ( $27.1 \pm 4.70$ ) to immediate ( $33.3 \pm 3.40$ ) and further to a slight increase at 3 months ( $34.0 \pm 3.40$ ) and then at 1 year ( $34.3 \pm 3.42$ ) follow up, within the experimental

group. The analysis by repeated measures ANOVA within experimental group ( $F=215.5$ ) also proved statistical significance. While comparing between groups, the calculated t values for post-test 1 (7.72), post-test 2 (8.48) and post-test 3 (8.60) were higher than the table value and show significant differences at  $p<0.001$ .

Results of the present study related to quality of life were supported by the study of Cajanding. In their study, prior to a 12-week program, samples in both categories had poor quality of life measures. After the program candidates in the experimental category had remarkable growth in their quality of life proving that Nurse-led cognitive-behavioral program is a fruitful technique in building the quality of life.<sup>103</sup>

Result of the present research also shows consistency with an investigation conducted by Piras et al. on efficacy of CST. In the outcome of this study members in a group who attended CST program revealed maximum refinement in general cognitive abilities and in quality of life.<sup>86</sup>

In contrary, the present study outcome was not supported by the randomized control trial carried out by Orrell et al., on cognitive stimulation program which was purely home based. In this investigation, interventions by caregivers did not support efficacy of the cognitive stimulation program on cognitive ability and quality of life. However, it was noted to improve caregiving relationship and their quality of life.<sup>104</sup>

#### **6) Correlation between cognitive functions and quality of life among elderly in the selected rural community**

In study outcome moderate positive correlation was found between cognitive functions and quality of life scores of elderlies.

Present outcome in regard to co-relation was supported by the study tested by Sharma et al. who summed up their study by stating that they found a moderately positive correlation between cognitive functions and QOL of the gold agers as per the values computed ( $r = 0.465$  and  $p < 0.05$ ).<sup>85</sup>

Further, the current research outcome in this context was also favored by Gamage et al., who tested the association between cognitive functions and quality of life and stated that both were weakly but markedly correlated each other.<sup>105</sup>

Also, in this regard, similar testing done by Saracli et al., on 243 samples of 65 years of age and above, to identify the co-relation in between cognitive functions and quality of life. The outcome was 0.6 at  $p < 0.001$ , which justify and support the current study findings.<sup>106</sup>

#### **7) Association between cognitive function, quality of life and selected demographic variables among elderly in the selected rural community**

The present research demonstrated that among all socio-demographic variables, age was identified significantly associated with quality of life score and it was interpreted that age has an impact on quality of life; also, the young old have better quality of life than the old-old. With the growing age if an individual has good physical, mental and social health, then their quality of life is found to be better, unless their health declines due to any reason.

This study findings proved that age has impact on quality of life. This observation was similar to that of a cross sectional investigation done by Park et al., in which the investigator explored associated socio-demographic factors among elderly. Among those factors age, literacy status, status of marriage, and number of diseases were found

associated with quality of life.<sup>77</sup> Further, this was also supported by Garbaccio et al., who undertook a work on quality of life and its association with age as one of the sociodemographic factors in rural areas. They stated and supported that in terms of good habits leading to good quality of life, elderly in rural areas were having better quality of life as compared with urban elderly; however, they lacked awareness about it.<sup>107</sup>

Also, this current outcome of the study was linear with outcome of work done by Campose et al. Their study included 2052 samples of age 60 years and above to identify the association of gender and age with quality of life. Their outcome identified that age is associated with quality of life. They reported that the young age elderly are having better quality of life when compared with elderly of older age.<sup>108</sup>

### **Strength of the study**

1. The study is first of its kind to use exploratory focused group discussion on elderly and their caregivers to explore various problems of elderly related to falling cognitive functions and then to develop and assess the effect of intervention on elderly.
2. There was a control group for comparison.
3. To evaluate the impact of Nurse Led Cognitive Stimulation Program in study there was post-test and follow up.
4. This study included techniques and activities which were easy to practice and remember.
5. Elderlies were repeatedly reminded and encouraged to practice Nurse Led Cognitive Stimulation Program and after each session homework has been given for practice.

6. All the activities of the cognitive stimulation program till 7 weeks, as practiced by elderly, was supervised by the investigator.

7. Elderly's acceptance of Nurse Led Cognitive Stimulation Program was very high.

**Limitations of the study:** Assessment of the effectiveness of Nurse Led Cognitive Stimulation Program on cognitive functions and quality of life among elderly was a challenging task. The study has following limitations;

1. The study was having small sample size.
2. The study 6 months follow up due to COVID-19 restrictions.
3. The control group could not be taught Nurse-Led Cognitive Stimulation Program during the study period.
4. In study there was loss of 8 participants in the third post-test due to COVID-19 pandemic.
5. Very less amount of literature was available to support the study results specially with quality-of-life component.

**Summary:** This chapter included discussion of the study findings on socio demographic variables, problems explored related to decline cognitive abilities, developed program as an intervention, effectiveness of cognitive stimulation program on cognitive functions and QOL and association of socio-demographic variables with decline in cognitive functioning and quality of life, and compared and contrasted it with previously done studies.