CHAPTER 5

5. DISCUSSION AND LIMITATIONS

The present study was carried out to evaluate the effectiveness of health promotion intervention in improving the quality of life among physically challenged children in selected schools of Punjab. The sample size for the present study was 120 physically challenged children out of which 60 were in study group and 60 were in control group.

The investigator has collected the required data regarding demographic and clinical variables by using the structured questionnaire. The investigator has used structured quality of life questionnaire validated by experts for assessing the quality of life among physically challenged children.

The conceptual framework used for the study was based on “Sampalli T, et al proposed model of integrated care to improve health outcomes for individuals with multimorbidities (2012).” This integrated care model is designed to address the specific needs of this complex patient population and comprises of four key phases i.e. intake, integrated care, transition and discharge. As per this model multidisciplinary health team members identifies the health needs of the patient then discuss and develop an individualized integrated care plan and provide integrated treatment, education and support to meet physical, psychological and social needs of the patient and reviews improvement in health status and seeks readiness for transition and discharge of care. The investigator has adopted these phases into the present study.
Based on sampalli T et al proposed model of integrated care the investigator has performed pre interventional intake screen of demographic and clinical variables through structured questionnaire and of quality of life through structured quality of life questionnaire for both the study and control group after explaining the research process and taking informed assent and consent from study subjects and their parents. The qualified physiotherapist identified the type of exercise needs depending on the category and level of locomotor disability and nurse researcher planned health teaching on diet in consultation with dietician and personal hygiene. The investigator has collected general information from the physically challenged children in study and control group.

Table 4.1.1 illustrate the demographic and clinical variables of physically challenged children in study and control group. In study group, similar 20(33.3%) of physically challenged children were in the age group of 10 to 13 years, 14 to 16 years and 17 to 19 years. Majority 38(63.3%) of them were male. One third 20(33.3%) of them were studying in secondary classes. Maximum 19(31.7%) of physically challenged children father were educated up to primary classes and also maximum 22(36.7%) of physically challenged children mother were educated up to primary classes. Almost less than half 25(41.7%) of them were having family income between Rs. 5001 – 10000. Majority 34(56.7%) of them were from nuclear family. Most 44(73.3%) of them were from rural area. Majority 35(58.3%) of them were having permanent physical impairment of lower limbs. Almost more than half 33(55.0%) of them were having moderate level of locomotor disability. Almost less than half 26(43.3%) of them were having duration of locomotor disability between 11 to 15 years. More than one third 24(40%) of them were not using any mobility aid.

In control group, similar 20(33.3%) of physically challenged children were in the age group of 10 to 13 years, 14 to 16 years and 17 to 19 years. Majority 38(63.3%) of them were male. Almost one third 23(38.3%) of them were studying in secondary classes. maximum 22(36.7%) of physically challenged children father were educated up to primary classes. One third 20(33.3%) of physically challenged children mother were educated up to primary classes. Half 31(51.7%) of them were
having family income between Rs. 5001 – 10000. Majority 38(63.3%) of them were from nuclear family. Maximum 39(65%) of them were from rural area. Most 48(80%) of them were having permanent physical impairment of lower limbs. Almost more than half 34(56.7%) of them were having moderate level of locomotor disability. Maximum 26(43.3%) of them were having duration of locomotor disability more than 15 years. Almost one third 21(35%) of them were not using any mobility aid.

There was no statistically significant difference found in the distribution of demographic and clinical variables between study and control group. Hence, the sample in both the groups were considered homogenous. Age and gender were matched with similar number of physically challenged children in control group.

Based on proposed model of integrated care, the nurse investigator and physiotherapist integratedly planned and provided health promotion intervention for the duration of 24 weeks to physically challenged children in study group. At the end of 24 weeks the investigator and physiotherapist discussed and formulated self management action plan as a transition of health promotion intervention and for next 12 weeks post intervention follow up was done by nurse investigator.

As mentioned in conceptual frame work, the investigator has performed post interventional assessment of quality of life during intervention phase, transition phase and discharge phase at 12th, 24th, and 36th week respectively among physically challenged children in study and control group by using the same questionnaire and quality of life outcomes were judged as per criterion measure.

The findings are discussed in relation to objectives framed for the study.
The first objective was to assess and compare the pre interventional and post interventional levels of the quality of life among physically challenged children in study and control group.

The data represented in the tables from 4.2.1 to 4.2.30 showed assessment and comparison of the pre interventional and post interventional levels of the quality of life among physically challenged children in study and control group. The findings were summarized as follows.

**Findings related to assessment and comparison of pre interventional and post interventional levels of quality of life among physically challenged children in study and control group**

In pre interventional, majority of physically challenged children 66.7% in the study group and 63.3% in the control group had fair quality of life and only 30.0% in the study group and 25.0% in the control group had good quality of life. There was no statistically significant difference in the pre interventional levels of quality of life between study and control group (p=0.79).

In post interventional I almost half 45.0%, in post interventional II majority 60% and in post interventional III most of 80% of physically challenged children in study group had good quality of life after practicing health promotion intervention for 12, 24 and 36 week respectively. In the control group, majority of physically challenged children 66.7% in post interventional I, 66.6% in post interventional II and 65.0% in post interventional III had fair quality of life after 12, 24 and 36 week respectively. There was statistically significant and very highly significant difference found in post interventional I (p=0.04), post interventional II (p=0.001), and post interventional III (p=0.001) levels of quality of life between study and control group.

In pre interventional (t=0.13 p=0.85) there was no statistically significantly different found in quality of life mean score between study and control group. In post interventional I (t=4.64 p=0.01), post interventional II (t=11.62 p=0.001) and post interventional III (t=12.62 p=0.001) there was statistically
significant different found in quality of life mean score between study and control group.

In pre interventional mean scores of all domains of quality of life were not statistically significantly different between study and control group (p>0.05). In post interventional I, post interventional II and post interventional III mean scores of all domains of quality of life were statistically significantly different between study and control group(p>0.001).

In pre interventional, half of physically challenged children 50.0% in study group and 45.0% in control group had fair physical wellbeing and only 36.7% in study group and 43.3% in control group had good physical wellbeing. There was no statistically significant difference in the pre interventional levels of physical wellbeing between study and control group (p=0.76).

In post interventional I 65.0%, in post interventional II 80.0% and in post interventional III 85.0% of physically challenged children in study group had good physical wellbeing after practicing health promotion intervention for 12, 24 and 36 weeks respectively. In control group in post interventional I, post interventional II and post interventional III similar less than half 45.0% of physically challenged children had good physical wellbeing after 12, 24 and 36 weeks respectively. There was statistically significant and very highly significant difference found in post interventional I (p=0.04), post interventional II (p= 0.001), and post interventional III (p= 0.000) levels of physical wellbeing between study and control group.

There was no statistically significant difference found in pre interventional mean scores of all sub domains of physical wellbeing among physically challenged children between study and control group (p > 0.05).

There was very high statistical significant difference found in all sub domains of physical wellbeing mean score except eye problems in post intervention I, post intervention II and post intervention III after health promotion intervention practice at p<0.001 level among physically challenged children between study and control group.
There was very high statistical significant (p= 0.001) difference found in mean scores of dryness, dandruff, foul smell, tooth ache, dental caries, dental plaque, bleeding gums, impaired appetite, flatulence, altered bowel elimination, altered sensation, muscle weakness, mobility restrictions, joint pain, headache, fatigue, cold intolerance, anemia , high statistical significant (p= 0.01) difference found in mean scores of itching, acne, eye redness, burning, coughing, and statistical significant (p= 0.05) difference found in mean scores of night blindness items of sub domains of physical wellbeing among physically challenged children between study and control group after 36 weeks of health promotion intervention practice.

In pre interventional, almost half of physically challenged children 48.3% in study group and 50.0% in control group had fair psychological wellbeing and similar 3.3% in study group and 3.3% in control group had good psychological wellbeing. There was no statistically significant difference found in pre interventional levels of psychological wellbeing between study and control group (p=0.99).

In post interventional I 13.3%, in post interventional II 28.3% and in post interventional III 33.3% of physically challenged children in study group had good psychological wellbeing after practicing health promotion intervention for 12, 24 and 36 weeks respectively. In control group, in post interventional I, in post interventional II and in post interventional III similar 3.3% of physically challenged children had good psychological wellbeing after 12, 24 and 36 weeks respectively. There was statistically significant and very highly significant difference found in post interventional I (p=0.04), post interventional II (p= 0.001), and post interventional III (p= 0.001) levels of psychological wellbeing between study and control group.

There was no statistically significant difference observed in pre interventional mean scores of all sub domains of psychological wellbeing among physically challenged children between study and control group (p > 0.05).

There was statistical significant difference found in all sub domains of psychological wellbeing mean score except self esteem problems in post intervention I, post intervention II and post intervention III after health promotion
intervention practice at p<0.05, p<0.01 and p<0.001 level among physically challenged children between study and control group.

There was very high statistical significant (p=0.001) difference found in mean scores of anxiety about health, fear about health, feeling that life is in control of things, feeling so down in the dumps that nothing could cheer up, life enjoyment, satisfaction with life, feeling that everything in life goes wrong, happiness with existing health condition, feeling of uncertainty about future, and high statistical significant (p=0.01) difference found in mean scores of feeling of sadness, feeling of under pressure, feeling of fedupness, irritability due to disability items of sub domains of psychological wellbeing among physically challenged children between study and control group after 36 weeks of health promotion intervention practice.

In pre interventional, less than half of physically challenged children 41.7% in study group and 45.0% in control group had fair social wellbeing and only 5.0% in study group and 3.3% in control group had good social wellbeing. There was no statistically significant difference in the pre interventional levels of social wellbeing between study and control group (p=0.95).

In post interventional I 11.7%, in post interventional II 16.7% and in post interventional III 20.0% had good social wellbeing after practicing health promotion intervention for 12, 24 and 36 weeks respectively. In control group, in post interventional I 3.3% and in post interventional II and in post interventional III no physically challenged children had good social wellbeing after 12, 24 and 36 weeks respectively. There was statistically significant and very highly significant difference found in post interventional I (p=0.05), post interventional II (p=0.001), and post interventional III (p=0.001) levels of social wellbeing between study and control group.

There was no statistically significant difference observed in pre interventional mean scores of all sub domains of social wellbeing among physically challenged children between study and control group (p > 0.05).
There was statistical significant difference found in post intervention I for participation in socio cultural activities, in post intervention II for social relationship problem, participation in socio-cultural activities problem, societal attitude problem and in post intervention III for all sub domains of social wellbeing mean score after health promotion intervention practice at p<0.05 and p<0.01 level among physically challenged children between study and control group.

There was very high statistical significant (p= 0.001) difference found in mean scores of engage and enjoy the activities with same age peers, satisfaction with engagement in leisure activities, attendance in school social events, high statistical significant (p= 0.01) difference found in mean scores of help for each other, satisfaction with the support and encouragement receive from others to meet needs, spend time with friends and statistical significant (p= 0.05 ) difference found in mean scores of feel left out with group of people because of disability items of sub domains of social wellbeing among physically challenged children between study and control group after 36 weeks of health promotion intervention practice.

Hence, RH1 stated that “There is a significant difference in the post interventional levels of quality of life among physically challenged children between study and control group” was accepted at p=0.05, p=0.01 and p=0.001 level of significance.

The present study findings are consistent with findings of a randomized controlled trial study conducted by Robinson W, et al to examine the efficacy of a health promotion programme on improving the health and health behaviours of children with physical disabilities in Italy. A sample of 137 children with physical disabilities was randomly assigned to either an 8-weeks health promotion programme (or) to a wait list control group. Both groups completed questionnaires before, immediately after, and 3 months after the intervention. The result showed that relative to children in the control group, children in the health promotion programme demonstrated improvement in physical and psychological health behaviours, most of which were maintained at follow up [176]. Similarly Broberg S (2011) conducted a pre- experimental study to evaluate the outcome of physiotherapy as part of a
multidisciplinary rehabilitation among 50 patients with late effects of polio. Patients were tested at baseline; 3 months after the start of rehabilitation and at one-year follow-up for functional capacity, fatigue and quality of life. The result revealed that the patients showed significantly better functional capacity on all measurements 3 months after start of intervention and at one-year follow-up. The patients showed significant improvement in 3 of the SF-36 dimensions regarding quality of life, but only the improvement in "general health" remained after one year. The study concluded that patients with late effects of polio, who experience new problems related to polio, can benefit from an individually planned multidisciplinary intervention with emphasis on physiotherapy, and the improvement in physical capacity and general health can remain at one-year follow-up [165].

The present study findings are also consistent with findings of study conducted by Hatami K et al to investigate the effect of physical activity on sleep disorder and symptoms of anxiety and depression in female students. In this study, 50 female students were randomly divided into two groups. The mental health of students was evaluated by general health questionnaire containing 28 questions. Results showed that there were significant differences in the symptoms of anxiety, depression and impaired sleep between experimental and control group (P < 0.01). The average score of anxiety symptoms and impaired sleep in experimental group before and after of physical exercises were 7.08 and 4.6 respectively and the average score of depression in experimental group before and after physical exercises were 4.16 and 1.96 respectively (P < 0.05) which could be indicated better mental health and the positive effect of physical activity on mental health in experimental students. On the other hand, the control group did not differ in mentioned parameters. Hence it was concluded that physical activity is an appropriate strategy for improving mental health [156].

The similar findings with present study results were also reported by Hassmen P that individuals who exercise at least two to three times a week experienced significantly higher levels of sense of coherence and a stronger feeling of social integration than their less frequently exercising counterparts [179].
The present study findings are contradict with meta analytical study conducted by Ekeland E et al to determine whether exercise alone or exercise as part of a comprehensive intervention can improve self-esteem among children and young people. Computerised searches in MEDLINE, EMBASE, The Cochrane Controlled Trials Register (CENTRAL), CINAHL, PsycINFO and ERIC were undertaken and reference lists from relevant articles were scanned. Relevant studies were also traced by contacting authors. The results indicated that exercise has positive short-term effects on self-esteem in children and young people. Since there are no known negative effects of exercise and many positive effects on physical health, exercise may be an important measure in improving children’s self-esteem [172].

The second objective was to determine the effectiveness of health promotion intervention on quality of life among physically challenged children in study group

Based on proposed model of integrated care, the nurse investigator measured the outcomes of health promotion intervention in improving quality of life by comparing pre interventional and post interventional quality of life score among physically challenged children in study group.

The data projected in the table 4.3.1 to 4.3.7 showed the effectiveness of health promotion intervention on quality of life among physically challenged children in study group. The findings were summarized as follows.

Findings related to effectiveness of health promotion intervention on quality of life among physically challenged children in study and control group

There was statistically very high significant difference found between the pre interventional and post interventional levels of quality of life among physically challenged children in study group(χ²=50.15, p=0.001), whereas, in control group, no significant difference was noted (χ²= 1.67, p=0.94).

There was statistically very high significant difference found between the pre interventional and post interventional quality of life mean score among
physically challenged children in study group (F=338.8, p=0.001), whereas, in control group, no significant difference was noted (F=2.14, p=0.6).

There was statistically very high significant difference found between the pre interventional and post interventional mean scores of physical domain (F=351.17 p=0.001), psychological domain (F=139.28 p=0.001), and social domain (F=158.17 p=0.001) of quality of life among physically challenged children in study group, whereas, in control group, no such significant difference was noted.

There was statistically very high significant difference found between the pre interventional and post interventional levels of all domains of quality of life among physically challenged children in study group (p=0.001), whereas, in control group, no significant difference was noted (p>0.05).

The Mean gain score from baseline (pre interventional) till 36th week (post interventional III) in study group was 18.0 (13.7%) for physical wellbeing, 8.18 (19.9%) for psychological wellbeing, 5.74 (13.9%) for social wellbeing and 31.92 (14.9%) for overall quality of life, whereas, in control group was 0.46 (0.3%) for physical wellbeing, 0.50 (1.2%) for psychological wellbeing, 0.40 (1.0%) for social wellbeing and 1.36 (0.6%) for overall quality of life.

Hence RH2 stated that, “There is a significant difference in the pre interventional and post interventional levels of quality of life among physically challenged children in study group” was accepted at p=0.001 level of significance.

The study findings are consistent with findings of the study conducted by Werven V.I. on the effect of health and hygiene school programme initiative among adolescents from September 2010 to November 2010 in Dhaka, Bangladesh. The two trainers organized interactive and participatory classroom sessions, providing adolescents with information ranging from basic hygiene to the effects of drugs and menstrual hygiene. The result revealed that the programme has resulted in an increased health and hygiene awareness among students and changes in behaviour related to food intake and hygiene [161].
The study findings are similar with findings of the study done by Shrestha A et al to evaluate the impact of health education on the knowledge and practice regarding personal hygiene among primary school children in urban area of Karnataka, India. Out of 7 schools Government Urdu Primary School was selected by simple random sampling. All the students of grade 3rd, 4th and 5th were included. Baseline and end line survey was done in February and September 2013. Health education sessions were conducted once a week for six weeks. The result showed that there was significant increase in knowledge and practice score of school children after health education intervention (p<0.05) [152].

Similar, study conducted by Siwach M in Panipat India found significant increase in knowledge and practice after health education intervention and Ilika AL et al in Nigeria found significant change in personal hygiene practice [170, 178].

The study findings are consistent with the findings of a prospective, randomized controlled trial study conducted by Oncu J on short-term effects of aerobic exercise on functional capacity, fatigue, and quality of life in patients with post-polio syndrome. The sample were 23 patients. The result revealed that polio survivors experience improved fatigue and quality of life following an aerobic exercise programme. Strengthening exercise can result in improved strength, but exercise should be carefully monitored and prescribed to avoid any potential exacerbation of muscle weakness [171].

The third objective was to find out the association between mean difference score of quality of life of physically challenged children in study and control group with their selected demographic and clinical variables

The data projected in the table 4.4.1 to 4.4.8 showed the association between mean difference score of quality of life of physically challenged children in study and control group with their selected demographic and clinical variables. The findings were summarized as follows.
Findings related to association between mean difference score of quality of life of physically challenged children in study group with their selected demographic and clinical variables

In study group, the physically challenged children who were in the age group of 17-19 years (F=3.15, P=0.05*), had family income Rs. 10,000-150000 (F=12.27, P=0.001***), residing in rural area (F=2.09, P=0.04*), and suffering with severe level of locomotor disability (F=9.55, P=0.01**) were found to have significant improvement in quality of life and were associated with quality of life gain score. The rest of variables were not associated with quality of life gain score.

In study group, the physically challenged children who were in the age group of 17-19 years (F=8.40, P=0.02), had family income Rs. 5000-10000 (F=6.94, P=0.03), residing in urban area (F=5.45, P=0.02), suffering with mild level of locomotor disability (F=6.37, P=0.04) and had duration of locomotor disability 0-5 years (F=10.80, P=0.01) were found to have significant improvement in physical wellbeing and were associated with physical wellbeing gain score whereas other demographic and clinical variables group were not significantly associated with physical wellbeing gain score.

In study group, the physically challenged children who were in the age group of 17-19 years (F=6.40, P=0.04), had family income Rs. 10000-15000 (F=7.43, P=0.02), residing in urban area (F=5.45, P=0.02), suffering with mild level of locomotor disability (F=8.37, P=0.02) and had duration of locomotor disability 6-10 years (F=8.22, P=0.04) were found to have significant improvement in psychological wellbeing and were associated with psychological wellbeing gain score, whereas other demographic and clinical variables group were not significantly associated with psychological wellbeing gain score.

In study group, the physically challenged children who had family income Rs. 5000-10000 (F=10.05, P=0.01), residing in urban area (F=5.45, P=0.02), suffering with mild level of locomotor disability (F=6.37, P=0.04) and had duration of locomotor disability 6-10 years (F=11.19, P=0.04) were found to
have significant improvement in social wellbeing and were associated with social wellbeing gain score, whereas other demographic and clinical variables group were not significantly associated with social wellbeing gain score.

The present study findings are similar with findings of study conducted by Kaka B on factors associated with health related quality of life among post-paralytic polio survivors. The results showed that the overall quality of life, physical health, psychological health, social relationship and environmental domain is not associated with their level of education and occupational status [111]. Jena PC in his study found that school setting and educational level do not have significant effect on orthopedically handicapped adolescents perceived control, self-esteem and academic performance. However, integrated school students showed higher perceived control, self-esteem and academic performance than their counterparts in non-integrated school setting [129].

The present study findings are contradictory with Liaquat S and Akram M study findings which revealed that physically handicapped female have low self-esteem \([t= 7.720 (0.000), p< 0.05]\) and high levels of social anxiety as compared to male \([t= -8.094(0.000), df= 148, p<0.05]\) [135]. Lenka KS & Kant R study result shows that gender plays no vital role on the social problems but female impaired children have more problem than male. High achiever students have less social problems in comparison to their counterparts. Locality has no significant effect on social problems but rural children have much more problem in comparison to urban children and this is due to unawareness and ignorance [136].

**Findings related to association between mean difference score of quality of life of physically challenged children in control group with their selected demographic and clinical variables**

In control group, none of the demographic variables age, gender, education, father education, mother education, family income, type of family, residential area, and clinical variables category of locomotor disability, level of locomotor disability, duration of locomotor disability, mobility aid used were significantly associated with quality of life gain score, physical wellbeing gain score,
psychological wellbeing gain score and social wellbeing gain score of physically challenged children.

Hence RH3 stated that, “There is a significant association between the mean difference score of quality of life of physically challenged children in study and control group with their selected demographic and clinical variables” was rejected at p=0.05 level of significance.

The secondary objective was to assess the level of satisfaction on health promotion intervention among physically challenged children in study group.

Table 4.5.1 shows the frequency and percentage distribution of physically challenged children in study group according to level of satisfaction on health promotion intervention. After 12 weeks of health promotion intervention practice, majority of them 44 (73.3%) were very satisfied, 10 (16.7%) of them were satisfied and 6 (10%) of them were neither satisfied nor dissatisfied. After 24 weeks of health promotion intervention practice, most of them 49 (81.7%) were very satisfied, 8 (13.3%) of them were satisfied and 3 (5%) of them were neither satisfied nor dissatisfied. After 36 weeks of health promotion intervention practice, most of them 53 (88.3%) were very satisfied, 7 (11.7%) of them were satisfied and none of them were neither satisfied nor dissatisfied.

Hence, the conceptual framework based on “Sampalli T, et al proposed model of integrated care to improve health outcomes for individuals with multimorbidities supported the findings of the present study by acting as a blue print and basement to find out the answer of research question. The above discussed study findings clearly represent that there has been very high statistical significant impact of health promotion intervention on quality of life. This draws the conclusion for the study that health promotion intervention is an effective intervention in reducing the occurrence and severity of secondary health conditions and improving the overall quality of life among physically challenged children.
5.1 LIMITATIONS

1. The investigator had no control on impact of extraneous variables (medical treatment for health problems and mass media) on quality of life of physically challenged children.

2. The study had evaluated the effect of health promotion intervention among physically challenged children in the age group of 10 to 19 years so findings of this study may not be directly applicable to other age groups of physically challenged children.

3. The study had evaluated the effect of health promotion intervention among physically challenged children studying in special school and residing in hostel so findings of this study may not be directly applicable to physically challenged children studying in normal schools and residing in home.

4. The study could not evaluate long lasting effect of health promotion intervention on quality of life among physically challenged children because of time constraint.

Chapterization

Chapter V: It dealt with discussion and limitations

Chapter VI: It deals with summary, conclusion, nursing implications and recommendations