CHAPTER II
REVIEW OF RELATED LITERATURE
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A careful study and exploration of the selected literature for present study is essential to have insight into work already done within the field. The research work done on this subject in our country is still in this infancy while comparing with some of the foreign countries. Therefore, this topic offers lot of hurdles and challenges for further study in this field.

Yoshimura and Jimba\(^1\) conducted a research study to find out the health promoting schools in urban, semi-urban and rural Lao PDR. The researchers evaluated 13 schools in three provinces using a checklist developed by the government school health taskforce. They interviewed first through fifth grade pupils, school principals, food vendors, community chiefs, and observed school environment. It was found that urban and semi-urban schools had higher scores than rural schools in the areas of, “personal health and life skills,” “healthy school environment,” “health and nutrition services,” and “common disease control and prevention”. It was further found that semi-urban and rural schools showed better results than urban schools for some question within the “school and community partnerships” component. When the results of individual schools were examined, there was considerable variation. It was found that a tendency for higher scores in urban areas, which went down for

\(^1\) Yoshhimura Noriko,and M. Jimba “Health promoting schools in urban, semi-urban and rural Lao PDR” health promotion International Advance Access originally published online journal Feb, vol 12:6 (2009) page.36
semi-urban areas and further decreased for rural areas. However, it was also found that there were differences among schools within each study site.

Kapoor\textsuperscript{2} conducted a research study to find out the effect of family climate on value development many children the studied in the present investigation to know the effect of family climate on value development in children. The researchers evaluated 50 boys and 50 girls of age group 14-17 (21 boys and 29 girls from positive climate and 29 boys and 21 girls from negative family climate) were selected as sample. Family climate scale of Beena Shah and personal value scale of G. P. Sherry were used for data collection. The result indicated that religious and dominating values were more developed in boys in comparison to girls whether they are reared in positive and negative family climate. Social, Democratic and cognitive values were more developed in girls in comparison to boys reared in positive climate. There was no significant difference on value development in children who were reared in negative family climate. Family prestige and hedonistic (sukhwadi) values were found in boys who were not getting love and affection from the family. It was found that there was no significant effect of family climate on the development of aesthetic and economic values.

Mishra and Singh\textsuperscript{3} conducted a research study to find out the Profile of Dietary Nutrition of School Children in Varanasi District. The overall 300 school children were purposely selected from rural and urban areas of

\textsuperscript{2}Archana Kapoor “Effect of family Climate on Value Development of children” Indian journal of Educational Research, Vol. 28:1 (June 2009) p.63
\textsuperscript{3}Dr. Aarsi Mishra, and Anita Singh, “ Profile of Dietary Nutrition of School Children in Varansi District” Anvikshikl Bi Monthly International Journal of Research, ISSN 0973-9777, vol.6 : 2, (June 2008) p 52
Varanasi. The information was collected with the help of “Questionnaire cum Interview Technique”. Twenty four hours food recall method was employed to collect the quantity of various food items. Amounts of nutrients were assessed on the principle suggested by the Indian Council of Medical Research. The Majority of the children belong to Hindu religion. The literacy of the mothers and economics status of the urban children was found significantly higher than their rural counterparts. Various nutrients consumed by rural children were significantly lower than the urban children. In respect of RDA, the energy consumption of other nutrients lacked from 2.42% (Calcium) to 2.8% (iron) in rural children. On the other hand urban children consumed adequate amounts of other nutrients as per ICMR recommendation. The reasons responsible was literacy of urban mothers

Mikkelsson⁴, et al, conducted a research study to find out relationships between adolescent physical fitness and adult health-related fitness. Forty-five subjects (20 males, 25 females) participated in physical fitness tests in 1976 and again in 2001. The adolescent physical fitness tests were distance running (2,000 m for boys or 1,500 m for girls), 50 m run, pull-ups (boys) or flexed arm hangs (girls), shuttle run, a 30-sec sit-up test, standing broad jump, hand grip-test, and sit-and-reach test. The adult health-related physical fitness index (APFI), stratified by sex, was formed by summing the z-scores of a bicycle ergo-meter test, sit-up test, hand-grip test, and sit-and-reach test. Height- and

weight-adjusted correlations between adolescence and adulthood for exactly similar tests for men and women were, respectively, 0.74 (95% CI, 0.44-0.89) and 0.53 (95% CI, 0.17-0.76) in sit-and-reach tests, 0.41 (95% CI, -0.04 to 0.72) and 0.55 (95% CI, 0.20-0.78) in sit-up tests, and 0.53 (95% CI, 0.11-0.44) and 0.44 (95% CI, 0.05-0.71) in hand-grip tests. When all adolescent tests were put in regression analysis together with BMI in 2001, the significant explanatory factors for APFI were distance running ability and the sit-and-reach test for men and sit-up test, flexed arm hang, and BMI in 2001 for women.

Benefice et al; conducted a research study to assess physical activity among rural Senegalese adolescent girls: and Influence of age, sexual maturation, and body composition. To analyze the level of habitual physical activity and its relationship with age, maturational stage and growth status in a group of adolescent Senegalese girls. Physical activity was assessed for 3 consecutive years in a sample of 40 girls of rural origin. They were 13.3 ± 0.5 years old at the beginning of the study and belonged to a serer community located in the center of Senegal. Minute-by-minute movement counts using accelerometers enabled quantification of levels of physical activity. The assessment was performed during a 4-day period in the first round and during a 3-day period in 1998 and 1999. Half of the girls were not yet pubescent during the first round, and the whole sample displayed retardation in weight and stature, compared with the World Health Organization/National Center for

health statistics reference. The estimated levels of activity were high, ranging from 1.80 to 1.85 multiples of basal metabolic rate. There was a clear decline in the activity level during the course of study. Schoolgirls were less active than the others. Mature adolescents showed more activity during the night. A weak, but significant and positive correlation existed between body mass index and activity during the day; during the night. There was a positive correlation with fat and lean body mass. Factors determining the activity level were intricate but greater maturity and better nutritional status appeared to be positively related to the activity level.

Loucaides et al.; conducted a research study to find out adolescents of rural area may be similar to those in urban areas. Difference in the Correlates of Physical Activity between Urban and Rural Canadian Youth Constantine’s despite the benefits of physical activity (PA). A significant proportion of youth remains inactive. Studies assessing differences in the correlates of PA among urban and rural youth are scarce, and such investigations can help identify subgroups of the population that may need to be targeted for special intervention programs. The purpose of this study was to assess differences in the correlates of PA between Canadian urban and rural youth. The sample consisted of 1398 adolescents from 4 urban schools and 1290 adolescents from 4 rural schools. The mean age of the participants was 15.6± 1.3 years. Hierarchical regression analyses were used to examine the association between self-reported PA and a number of demographic, psychological, behavioral, and

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6 A. Loucaides, C. Ronald Plotnik, and Kim Bercovitz, “Adolescents may be similar to those in urban areas. Difference in the Correlates of Physical Activity Between Urban and Rural Canadian Youth Constantan’s”, (17 January 2007) pp.312-354
social correlates. Common correlates between the 2 locations included gender (with girls being less active than boys) perceptions of athletic/physical ability, self-efficacy, interest in organized group activities, use of recreation time, and friends’ and siblings’ frequency of participation in PA, Active commuting to school and taking a physical education class were unique correlates of PA at the multivariate level in urban and rural students, respectively. Variance explained in PA ranged from 43% for urban school students to 38% for rural school students. Although more similarities than discrepancies were found in the correlates of PA between the 2 locations. Findings from these studies strengthen the policies that argue for a coordinated multi sector approach to the promotion of PA in youth, which include the family, school, and community.

Tsimeas and Tsiokanos\(^7\) conducted a research study to investigate does living in urban or rural settings affect aspects of physical fitness in children? The aim of this study was to investigate physical fitness in relation to fatness in urban and rural Greek children by means of algometric scaling. The sample consisted of 360 (189 urban and 171 rural; age 12.3± 0.42 years) boys and 247 (125 urban and 122 rural; age 12.3± 0.42 years) girls. The sample was highly representative (32-64%) of all 12 year old children registered in the prefecture of Trikala, Greece. All volunteers were assessed for BMI and % body fat, as well as sit and reach, basketball throw (BT), vertical jump (VJ), handgrip strength (HG), 40 m sprint, agility run, and 20 m shuttle run. To correct for

possible associations between fatness and fitness, a single cause algometric scaling was employed using the natural logarithms (ln) of fitness parameters that were significantly correlated with the body fat. Independent-samples t-tests revealed that VJ (p<0.05) was significantly higher in boys living in urban settings compared to their rural counterparts. Similarly, BT was found to be significantly better (p<0.05) in urban girls, whereas HG was significantly higher (p<0.05) in rural girls. It is concluded that, only three out of the 14 possible cases (seven fitness parameters for boys and seven for girls) were significantly different between urban and rural children, and these differences were not uniformly distributed in children living in either urban or rural environments. It was concluded that the place of residence has no clear impact on physical fitness.

Lawson conducted a research study to find out the examination of superior physical education program effective in pretension and reduction of child obesity. This study used data compiled from a recognized credible source, i.e., the 2003 California Physical Fitness Test (CPFT). The analysis of data from the 2003 CPFT revealed that 4 schools were markedly superior to 117 similar schools in their student’s physical fitness scores. Based upon these scores, only the students, administrators, teachers, and local community recreational department leaders involved with the 4 most physical fit schools were selected for examination in this study. All of the items used to synthesize

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a model physical education programs were based on responses garnered from the stakeholders of the 4 schools, which were determined to have the most physically fit students. From these stake holders’ suggestions, a specific categorized model of an exemplary physical education program was created. The purpose of this model program is to provide a specific blueprint for physical education program to follow to reduce or prevent the number of overweight or obese students in their schools.

Ozdirenc and Ozcan⁹ conduct a research study to find out physical fitness in rural children compared with urban children in Turkey in a crowded modern world it is vital that the promotion of sport and exercise should be compatible with environmental and public health outcomes. This study aims to investigate the effects of environmental factors, lifestyle and leisure time activities on physical fitness in rural and urban Children. A cross-sectional observational study of 98 rural and 74 urban healthy children (aged 9-11 years) was conducted in Turkey. A questionnaire was used in collecting information about the children’s physical activity habits and their school’s facilities. The physical fitness of children was evaluated whit EUROFIT test battery. The researcher evaluated that the rural children preferred to play football and Volleyball While the urban children had a tendency to prefer indoor sports. The percent of urban children not involved in any sports activity was 35%, while this rate was 30.6% for rural children. It was also found that the urban children watched TV more than the rural children (13.4±2.7 h/week, 10.9±2.7 h/week, respectively) The

⁹ Mehtap Ozdirenc, and Ayse Ozcan “Physical fitness in rural children compared with urban children in Turkey” (2005) pp. 128-138
results showed that body mass index and skin folds thickness were higher in the urban children (P<0.05). There were no significant differences in the hip-waist ratio or the hip and waist circumference between the two groups. In cardiopulmonary and motor fitness, no difference was found between the two groups. In contrast, flexibility and muscle endurance were significantly higher in the rural children.

Roxane and Matre\textsuperscript{10} conducted a research study to find out “Rural-Urban Differences in Physical Activity, physical Fitness, and overweight Prevalence of Children”. A better understanding of possible rural-urban differences in physical activity profiles may facilitate the development of more targeted physical activity interventions. Participants (1,687 boys; 1,729 girls) were recruited from fourth, fifth, and sixth grade classes in schools from urban areas, small cities, and rural areas. Multilevel modeling analysis was used to examine rural-urban differences in physical activity and prevalence of overweight. Physical activity was assessed by self-report and body mass index was calculated from measured height and weight. It was found that prevalence of overweight was higher among rural children (25%; P < .001) than children from urban areas (19%) and small cities (17%) Urban children were the least active overall (Cohen’s d= -0.4), particularly around lunchtime while at school (d = -0.9 to -1.1). Children from small cities reported the highest levels of physical activity. The results of this study suggest that there were rural-urban

differences in children’s prevalence of overweight and physical activity even within a fairly homogenous Midwestern state.

Masurier and Christopher\textsuperscript{11} conducted a study to determine the steps/day accumulated by middle school student (Grades 7-8) and to determine if participants differing in aerobic fitness also differed in accumulated steps/day. Participants included 223 students from the seventh grade (n=111; 57 males and 54 females) and eighth grades (n=112; 54 males and 58 females). Participants accumulated four days of seated perimeter data and performed the Fitness gram pacer test. Males accumulated significantly more steps/day then females (11,589+ 3270 vs. 10,232+2517, Steps/day, respectively; F 1,219= 16.0 P< 16.0, p<.001) There were no differences in steps/day between grades. High fit participants accumulated significantly more steps/day (F2, 217 = 264.9 p <.001) than moderately is low fit participants (=1,491 and =2,867 steps/day, respectively). The Pearson correlation between steps/day and aerobic fitness was 0.35 (p < .01). Participants who participated in sports in addition to physical education (PE) accumulated significantly more steps/day (=980 steps/day) then those participating in PE only (F 1,219= 10.0, P < .002). Combined with previous research on elementary and high school students, the steps/day data gathered from middle school students completes a preliminary activity curve illustrating the consistent pattern of differences between males and females and a decrease in physical activity as youth grow older. The low relationship between physical activity and aerobic fitness was reconfirmed

\textsuperscript{11} Masurier Le, and Christopher Guy, “Physical activity and aerobic fitness levels of middle school Students”. \textit{Dissertation Abstract International} 65:2 (Aug.2004).p.65
Participants in the high fitness category were more active than those in the lower categories and sports participation accounted for a significant amount of daily step counts.

Tomar\textsuperscript{12} conducted a research study, to investigate the status of participation of rural and urban female students in sports at senior secondary level in Ghaziabad District. To identify the background factors generating the phenomenon of lesser participation among rural and urban female students separately with a view to establish relationship of such factors with their poor participation. He also investigates to judge the potential of female sportsmanship from rural and urban areas.

For the purpose of this study 400 female students of senior secondary level representing their respective schools were randomly selected. Out of 400, 200 girls’ students were representing rural community whereas other 200 girl’s students were representing urban community. The schedule for assessing their background was prepared and was distributed to all the selected girls. The number of response in ‘yes’ and ‘no’ were considered as data and it was arranged according to the rural and urban community. It was found that the girls participation in games and sport come largely from the urban areas and girls are motivated to take part in games and sports in those institutions where facilities are extended to them for sports. It was further found that more availability of grounds and materials does not motivate the girls to take part in

\textsuperscript{12} Y.S. Tomar, “Background Factors of Rural-Urban Female Students with Regard to their lesser Participation in Sports at Senior Secondary; Level”, \textit{Journal on Sports Medicine}, (19 July 2004).pp 129-142
games and sports. It was concluded that the type of family (joint and nuclear) does not affect the girls’ participation in games and sports. It was further concluded that the higher the level of education of the family, encourages girl’s participation. The reasons for lesser participation were lack of consciousness, and social prejudices amongst girl’s participants. It was concluded that rural girl’s parents were against allowing the girls to participate in sports with boys. The rural girls were of opinion that participation may lead to masculine body structure. The rural girls’ opinion was that female teacher/coaches should impart training to them. It was finally concluded that both urban and rural girls are found unanimous on point that participation in games and sports affects their studies adversely.

Francis\textsuperscript{13} conducted a study to examine the factors influencing Massachusetts urban school principals’ decision-making related to physical education practices in schools. This study is important if educators are to understand what influences the decision-making process of urban school principals relative to physical education in their buildings. The initial surveyed data were collected from 86 principals, and follow-up survey data from 20 of the same principals. All principals surveyed were drawn from Massachusetts public school systems with a minority student population of 25% or more. Literature related to national, state and local physical education programs was reviewed and analyzed. This study found that Massachusetts urban school

principals report that the following. Significant factors influenced their decision-making with regard of physical education like their attitudes and experiences, School boards, superintendents, parent organizations, state and local educational policies and mandates set by state and local policies in Massachusetts public schools.

Royal and Dhingra\textsuperscript{14} studied to find out the attitude of parents towards their children in early years of life (0-6 years) in the field of play, among rural family of Jammu. The major objectives were to find out the parents attitude towards play of girl child; and to observe the extent change among the two generations regarding play. The samples consist of 40 families. Interview schedule and non-participant field observations were used as the tool for the study. The major findings reveal that the majority of the parents were having same attitude towards both the sexes and preferred to support both in every sphere related to play. They equally disturbed things among them and personally fulfilled their needs. Most of the parents favoured girl child to play and even encouraged them to participate in games. It was found that the attitude of rural parents have changed, which was mainly due to the education and awareness that has come in parents.

Deepika\textsuperscript{15} et. all.; Conduct a research study to find out the developmental changed in personality trait of rural Punjabi children. A cross


sectional study on 972 (boys=486, girls=486) belonging to Ludhiana district (rural area) to assess the pattern of development of various personality traits at different age levels. The sample was divided into two groups i.e. 6-8 group, 9-11 groups, 12-18 year. The data on various personality traits was collected by using three forms of Multi dimensional Assessment of personality Series (MAP). Eight Common personality traits were studies viz. Boldness, Competition General Ability, Guilt Proneness, Morality, Sensibility, Social Warmth and Tension. The results indicated intensity of various personality Traits changed with increase in age. It was further found that personality traits like boldness, competition and morality increased with increase in age. Boys were found more sensitive at 9-11 years of age where as girls found least sensitive at this popular age. Tension was found more in 6-8 years old boys and girls than children of other age groups. It was further observed that boys and girls 12-14 year old were socially warmer. It could be concluded that in almost all the personality traits similar development trend was observed for boys and girls except for sensitivity and guilt proneness.

Venkaiah et al.; conducted a research study to find out the current diet and nutritional status of rural adolescents in India. Cross-sectional study with household as the unit of randomization, National Nutrition Monitoring Bureau collected information in the rural areas of the nine States. In each State, 120 villages were selected from eight districts. From each of the selected villages, 20 households (HHs) were selected from five clusters. The information on

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socio-demographic profile was collected in all the 20 HHs, while anthropometric data such as weight, height and clinical signs of nutritional deficiency was collected on all the available adolescents in the selected households. In every fourth sampled household, ie. Five HHs, dietary information on all the members was collected using 24 h dietary recall. The outcome measures for nutritional status were proportion of underweight (<median -2 s.d. of NCHS standards of weight for age), stunted (<median -2 s.d. of NCHS standards of height for age) and body mass index. The nutrient intakes were compared with recommended dietary allowances (RDA). Anthropometric and socio-economic information on 12124 adolescent boys and girls and dietary information on 2579 individuals in 1996-1997 was available for the analysis. The major occupation of the heads of the households surveyed was agriculture. More than it third (37.3%) of the families with adolescents did not possess any land. The per capita income per month was about Rs.250- at 1996-1997 prices. About 23% of the adolescent girls were married before the age of 18 years. About a quarter of the married adolescent girls had short stature and 18.6% were underweight. They considered as ‘at risk’. About 39% of the adolescents were stunted (<Median -2 s.d. of NCHS height for age) irrespective of sex. The prevalence of under nutrition (<median -2 s.d. of NCHS weight for age) is higher (53.1%) in boys than in girls (39.5%). The extent of stunting was higher (42.7%) among adolescents belonging to the scheduled caste community. In the case of girls, the extent of underweight was considerably less in each age group than their male counterparts. About 70% of
adolescents consumed more than 70% of RDA for energy. The intakes of micronutrients such as vitamin A and riboflavin were woefully inadequate. The extent of under nutrition was high among adolescents and was higher among boys than girls. Adolescent girls in the rural areas could be at greater risk of nutritional stress because of early marriage and early completion before completion of their physical growth.

Lashbrook\textsuperscript{17} conducted a research study to find out the effect of hatha yoga practice on the health related aspects of physical fitness. The researcher took ten healthy, untrained volunteers (nine females and one male), ranging in age from 13-17 years, were studied to determine the effects of Hatha yoga practice on the health-related aspects of physical fitness, including muscular strength and endurance, flexibility, cardio respiratory fitness, body composition, and pulmonary function. The subjects were required to attend a minimum of two yoga classes per Week for a total of 8 weeks. Each yoga session consisted of 10 minutes of pranayamas (breath-control exercises), 15minutes of dynamic warm-up exercises, 50 minutes of Asanas (yoga postures), and 10 minutes of supine relaxation in Savasana (corpse pose). The subjects were evaluated before and alter the 8-week training program. Isokinetic muscular strength for elbow extension, elbow flexion, and knee extension increased by 31\%, 19\% and 28\% (p<0.05), respectively, Whereas isometric muscular endurance for knee flexion increased 57\% (p,0.01).Ankle flexibility, shoulder elevation, trunk extension, and trunk flexion increased by

13% (p<0.01), 155% (p<0.001), 188% (p<0.001), respectively absolute and relative maximal oxygen uptake increased by 7% and 6% respectively (p<0.01). These findings indicate that regular hatha yoga practice can elicit improvements in the health related aspects of physical fitness.

Mehra and Agarwal\(^\text{18}\) conducted a research study to find out the Adolescent health determinants for pregnancy and child health outcomes among the urban poor. The effect of a daily intake of a micronutrient-fortified beverage for 14 m. on indicators of biochemical status of important micronutrients in school children. A double-blind, placebo-controlled, matched-pair, cluster, randomization study design was used. Biochemical indicators of micronutrient status were evaluated at baseline and at the end of 14 m. on a subsample in nine matched pairs. Prevalence (percentage) of subclinical deficiency, mean, and mean increments of each indicator were compared between supplemented and placebo groups. Extent of inadequacy at baseline was more or less 100% for folic acid, 65% for vitamins B2 and B6, and 55% for vitamins C and A. Prevalence of anaemia among subjects was 55%, with inadequacy of vitamin B12 being 40% and that of vitamin D being 30%. No subject had inadequacy of iodine based on urinary iodine. Supplementation of a micronutrient-enriched beverage for 14 mos significantly improved the status of many of the nutrients. The effect was significant with respect to vitamins A, B2 and B12, folic acid, vitamin D, parathyroid hormone,

and thyroid-stimulating hormone in children who received the supplement compared with those who received only placebo. Haemoglobin status improved only in children who had anaemia in the supplemented group. Prevalence of multiple subclinical micronutrient deficiencies is high in middle-income Indian school children. Daily consumption of a micronutrient-enriched beverage had positive effects that were confined to those nutrients that were inadequate at baseline.

Michael and Scott\textsuperscript{19} conducted a research study on physical activity level of rural adolescents. Eight hundred and twenty two middle school adolescents (M = 229, F = 593), mean age = 13.9 in three rural Indiana middle schools reported their participation in out-of-school physical activities over a 5 day period. Responses to the activity items were recorded into sedentary, active, and very active exercises and preferred types of exercise. Over one-third (36\%) of adolescent males indicated participation in vigorous physical activity less than 2 times per week and almost half (42\%) of females reported levels of activity below nationally recommended guidelines. The Adolescent males reported more frequent engagement in strength exercises than females (33\% and 25\% respectively). Over one third of males and females (35\% reported stretching three or more times each week. Significant differences were found between males and females satisfaction with their present body weight such that 21\% of males and 44\% of females indicated dissatisfaction with their present body weight. Males and females both reported a preference for active

\textsuperscript{19} Savage P. Michael and Lisa B. Scott, “Physical Activity level of rural Middle School Adolescents” \textit{Journal of Youth and Adolescence} Vol.27: 2, (April 1998) p:128
team sports such as volleyball, football, softball, and individual activities such as weight training, bicycling, and swimming. The levels of reported activity reflect national survey findings, indicating that many adolescents may not be involved in the recommended levels and that exercise behaviours of rural.

Devrishi and Sinha\(^\text{20}\) made a comparative study of selected anthropometric and motor quality profiles or girls (8-14 years) of eastern and north eastern Region of India. The study was carried out on 700 healthy school going girls of ER and NER of India. ER girls were taller than NER girls but NER girls were heavier than their ER counterparts except at the age of 13 years, where ER girls were found to be heavier. Height and weight were found to be the strong predictor of strength and anaerobic performance where adiposity as selected by sum of skin folds was the weakest predictor of running, jumping and endurance performance. It was concluded that regional variation for different anthropometric and motor quality variables may be attributed due to geographical variation, environmental influences, genetic factor, nutritional variation and differences in socioeconomic status of ER and NER girls.

Sevier\(^\text{21}\) conducted a study to see the effect of aerobic dancing on selected physical fitness and personality variables in a group of adult’s women following participation in a six week program of aerobics dancing. The results


indicated that the subjects improved significantly in the area of physical fitness and showed change in four facts of personality. Significant change occurred on the National YMCA physical fitness test in each of the evaluated items which included the components of cardio-respiratory endurance, body composition, flexibility, muscular strength and muscular endurance. The subjects demonstrated significant improvement in the degree to which the environment was perceived as facilitating or retarding their functioning is measured by the life quality inventory.