Chapter II

REVIEW OF RELATED LITERATURE

For the present study, a careful observation and exploration of the related literature studies is essential for insight presentation to the work which has already done in this field. The writer has given a deep thinking to these studies and has gained valuable hints from their procedure, and findings which were of great aid in developing research work. A brief review of related studies has been located in various sources of the present study which have been incorporated in this chapter:

Voeks, Gallangher and Langer\(^1\) studied visual impairment exerts a more wide ranging import on functional status. It increases with advancing age. Approximately, 15% of people over the age of visual impairment and this figure rises to nearly 30% of those 55 years old and more than them have revive eye glasses and over 20% of those over 55 report that even with the aid of a great deal of difficulty seeing. Age related changes in the lens of the eye causes a scattering of light which increases the older person’s resistance to glare. This can constitute a significance driving at night. In addition, there is an almost universal age-associated change in near vision which is more rigid, less flexible and thus less able to focus at close range.

Deshen and Deshen\textsuperscript{2} conducted a study on the relation between blind parents and seeing children in the way in which parenthood interacts with their disability in sensory response. The authority of parents over their children is undermined by the general stigmatizing of blindness of which children soon become aware. In order to strengthen their position, parents may emphasize blindness linked assets such as their ability to move officials, to compassion or the fact that they are often better educated than their sighted relatives.

Dick, Semple, Sontar, Osborne, Cherrie and Seaton\textsuperscript{3} conducted a study to determine whether acquired vision deficits individual the associated with cognitive impairment. A sample of 82 visions impaired and 38 cognitive impairment subjects were studied. Alcohol, drug, and smoking histories were obtained. Vision was tested using the Lanthey D-1 5-d vision test. Cognitive impairment was measured using the Benton visual retention test, Trail making A, and Trail making B tests. Pre-morbid IQ was estimated using the National Adult Reading Test. Solvent exposure in all subjects was estimated using a previously validated, structured subjective assessment methodology. After exclusion of subjects with competing causes of vision impairment the final group of men numbered 78. There was a significant association on multiple linear regression between the mean colour confusion index (CCI) and three


measures of cognitive impairment, the Benton visual retention test, Trail making A, and Trail making B tests after adjusting for the effects of age (or IQ as appropriate), alcohol, and smoking. Acquired vision loss is associated with cognitive impairment in solvent exposed workers. However, given the prevalence of acquired vision losses in the adult population, vision testing is unlikely to be of value as a screening test.

Maxfield and Fajeld⁴ found that a group of partially blind children were more developed than an age-matched group of totally blind children. In this study, the result suggested that the totally blind students are more docile, have less initiative, were active and out-going, more introverted and possibly more co-operative than partially seeing children.

Galveston⁵, researcher at the University of Texas Medical Branch, conducted a survey related study to find out between the vision impairment and mental problems. The study included 2140 Mexican-American adults aged 65 years and older who were periodically given standard tests of mental function over 7 years. The poor close-range vision may limit older adults' activities including mental exercises like reading and crossword puzzles thereby contributing to cognitive decline. In addition, lack of visual stimulation to the brain may affect the workings of nerve cells. Overall, 14 per cent of study participants had impaired near-range vision, while 7 percent had problems with

⁵ F. M. Galveston, “Relation between Visually Impaired and Mental Impaired Individuals”, Journal of American Geriatrics Society, No. 6, May, 2005, p. 34.
both near and distance vision. On average, the researchers found, these adults showed a quicker rate of decline on mental functioning tests over the next 7 years compared with their peers. There was no association, however, between mental decline and impairments in either distance vision or hearing. They have concluded that impaired near range vision enhance the mental retardation. Impaired near-range vision might enhance the rate of mental decline in older adults as they age.

Herse and Gothwal⁶ conducted a survey of visual impairment in India. A retrospective survey 4,122 consecutive patients were tested in a tertiary care hospital in Hyderabad, India. Data collected included age, gender, visual acuity after completion of treatment and diagnosis. 62.8% of the patients were male. After completion of treatment, 10.8% had low vision (best corrected visual acuity < 6/18 to 3/60 in the better eye) and 2.6% were blind (best correct visual acuity < 3/60 in the better eye). Most cases of low vision were found in the 50 to 70 year age group (42.9%). The most common visual acuity range after treatment amongst patients with vision loss was <6/18 to 6/60 (71%). The 4 main causes of low vision were cataract (21.4% of low vision group), glaucoma (14.0%), diabetic retinopathy (13.0%), and retinitis pigmentosa (10.7%). The 4 main causes of blindness were glaucoma (16.3% of blind group), diabetic retinopathy (13.2%), corneal opacities (11.6%) and retinitis pigmentosa (11.6%). It is suggested that patients with low vision at the conclusion of

treatment be referred to a vision rehabilitation centre. Referral should be made in cases with a best corrected visual acuity < 6/18 to 3/60 or with visual field loss to within 15 degrees of fixation. Patients aged less than 50 years of age are expected to achieve maximal rehabilitation success. Motivation and vocational requirements should be assessed in older or more complex cases before referral. The data of this study shows that about 10% of patients seen at a tertiary care hospital in India could benefit from low vision rehabilitation.

Penelope\textsuperscript{7} sought to study to determine if a single method of instruction could be developed which would facilitate the learning of a specified programme of activities for children with a variety of multi-handicapped hearings impaired children. If this method could positively affect the three major areas of concern social learning language cognitive development and motor skill development and if the sequential order of presentation and practice within the method was effective for hearing impaired children. Subjects were 4 multi-handicapped hearing impaired children in EYE level PC class. The study required the observation method for a period of five days while baseline rates of behavior were recorded by the observer. During 2, 3 and. 4 week intervention were instated and behaviours again recorded. During intervention 2 and 3 the sequence of presentations were manipulated to determine if the sequential order of the method was adequate for effective learning.

The raw data was categorized computer and graphed analyzed through multiple baseline and multiple element sign. The results of the study indicated that the learning of a content of the specialized physical education programme was facilitated language and hence cognitive development of subjects.

Wisher\(^8\) points out that some deaf people think in terms of motion. Consequently, the area of dance may have relatively more importance in the lives of deaf than the hearing.

Farrugia and Austin\(^9\) compared maturity, self-esteem and adjustment of 200 deaf and hard of hearing students in the age group of 10 to 15 years with hearing controls. They were from both residential schools and day scholars. He used the Social Emotional Assessment Inventory (SEAI) for the test. It was observed that deaf students attending residential schools and hearing controls were similar in all areas. Hearing impaired and deaf students in public schools had lower level of social and emotional adjustment and maturity than the other two groups.

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Vandell and George\textsuperscript{10} examined the quality of interaction between pairs of deaf and hearing pre-school children. The result was found to indicate that the hearing children were more likely to reject deaf child's attempts to interact (over 30\% of initiations were rejected) where as deaf children seldom rejected hearing children's initiation. It was evident that hearing children were not in favour of modifying initiation and continue to talk the deaf children with little use of gestures, touch, signs or use of combined modalities.

Josef\textsuperscript{11} conducted a study to understand the changes that occur in the central auditory system of human beings and the deafness is either congenital or acquired. For example, studies with magneto-encephalography have shown that in subjects with unilateral idiopathic sudden sensory-neural hearing loss, the responses to acoustical stimulation. In those persons who had profound unilateral sensori-neural bearing loss from early childhood, the amplitudes and latencies of the evoked responses suggested delayed development. Plastic changes in the auditory pathway were also observed in adults with post childhood onset of profound unilateral deafness. Compared with monaurally stimulated normal-hearing subjects, the auditory evoked potentials showed significant increases in interhemispheric waveform, cross-correlation coefficients, and peak amplitude correlations. These increases provide evidence of substantial changes from the normal pattern of asymmetrical


(contralateral > ipsilateral amplitude) and asynchronous (contralateral earlier than ipsilateral) central audits stenractivation in normal subjects to a much more symmetrical and synchronous activation in the unilaterally deaf.

Preston\textsuperscript{12} conducted a study of hearing children of deaf parents, also shows the relationship between parent-child dynamics and the wider society. He surveyed that the deaf people are highly endogamous, clearly demarcated cultural community. Hearing Children born of deaf parents identify with this community and experience it as normal. But ultimately their membership is ambiguous because they can hear. They have a polarized understanding of deafness as viable and normal and as stigma and deficit. He had concluded by emphasizing that the meaner of disability are ultimately different on social context. It is necessary to examine significance from particular social position.

Cruickshanks et al\textsuperscript{13} published results of a five year epidemiology study in which they monitored hearing loss among a group of adults aged 48-92 years, 1634 of whom had no hearing loss at time of baseline evaluation and 1085 had some hearing loss. The five years incidence of hearing impairment was 21% and was higher among men than women (30.7% and 17% respectively). Age was a significant risk factor for both incidence and progression of hearing loss and more than half of those identified as having

hearing loss at baseline examination experienced a progression in their hearing loss. The incidence of hearing loss increases with age and is more relevant among men than women by a nearly 2:1 ratio due to increased longevity increase survival rates of illness and accident and aging of the 'baby boomer' segment.

Dyssergaard and Meadow\textsuperscript{14} found deaf children with learning disabilities showing greater problems on the Social Emotional Adjustment Inventory (SEA). It was also observed that compared to hearing children, deaf children were more accident prone, destructive, and impulsive and had more difficulty in distinguishing fact from fiction. Findings were interpreted as the result of experiential deficits due to communicative deprivation.

Elder\textsuperscript{15} conducted a survey of the self-reported impacted of hearing loss on functioning indicate a positive but modest relationship between self-perceived handicaps and measured hearing loss. Typically, a moderate hearing loss in the better ear is associated with self-reported hearing handicaps. Results indicate, however, that the handicapping effect of a hearing impairment cannot be predicted accurately just from clinical measures of degree of hearing loss or of supra-threshold speech recognition but also require a self-report of the communication handicap. By age 60, detection of pure tones is within


ormal limits in the low to mid frequencies and is within the mid-to-moderate
hearing loss range in the higher frequencies. Additional increases in thresholds
occur through age 90, resulting in a mild hearing loss in the low frequencies and
a moderately severe hearing loss in the higher frequencies. On average, men
have poorer auditory thresholds than women. The hearing losses are partly
acquired through environmental exposure or disease.

Erdman and Demorest\textsuperscript{16} conducted a study on the relationship between
non-verbal communication and personality adjustment. He chose the hearing
loss individuals and made a survey study. Adjustment to hearing loss may be
impeded by negative attitudes or stigma. Hearing loss is associated with old
age, embarrassment, lack of confidence, and less intelligence. Some evidence
suggested that men and women differ in perception stigma. The result shows
that non-verbal communication more frequently perceive more frequently in
relation to the personal adjustment to hearing loss.

Bess, Lichenstein and Logan\textsuperscript{17} studied how the hearing loss effect health
and well-being. Four frequency pure-tone averages for Group - I were <5dB,
compared with 10 dB and 25 dB for Group - II and Group - III respectively. Like
many health-related investigations, investigations of hearing and the impact of
hearing loss have focused on female research populations. Results of studies

\textsuperscript{16} L. Erdman and S. Demorest, “Relation between Non-verbal Communication and Personality
Adjustment”, British Journal of Speech, Language and Hearing Research, Vol. 12, No. 4,
199, p. 2.

\textsuperscript{17} N. Bess, R. Lichenstein and K. Logan, “Effect of Hearing Loss on Health and Human
from a variety of disciplines suggest that adult development is influenced by biological change, psychological traits and social process. Both Cohort (normative) and individual (non-normative) effects including age, gender, socioeconomic status and indicates how persons grow older. Self-perceived hearing ability is not only age dependent, but may have relationship to measurable hearing thresholds. They also suggest that regular hearing evaluation for women of all ages could increase early detection of hearing loss and document declines in function.

Turner\textsuperscript{18} studies about the effect of sensory sensitivity influencing on the lifestyle and longevity. There is a complex interaction between hearing loss and personal and social that influences hearing loss management by variables that influence hearing loss management by older women and men. Gender comparative research is needed to disentangle these variables. Gender difference is noted in age-related change in the structure and function of the auditory system, hearing loss etiology as well as in general health, economic resources, and importance of social communication among older adults. Far less is known about adjustment to hearing loss. The result shows that hearing loss is most chronic condition along with the human being and has a powerful influence on lifestyle and longevity the aging process differs for women and men throughout the life.

Cohen and Vas Nostrand\(^9\) conducted a comparison study among men and women on hearing loss. Gender-specific information is most abundant in to incidence, prevalence, and severity of hearing loss. Less is known about factors that may influence adjustment hearing loss, particularly among women. Hearing loss increases with age and is among the most common chronic conditions reported by adults. Impaired hearing was reported by 34% of men and 26% of women over 65. By age 75, 48% of men and 37% of women experience hearing loss. Because women are the majority of the population, the actual number of older women experiencing hearing loss is higher than men.

Mrs. H. Chattopadhyay\(^20\) conducted a study about the influence of deficiency in one sensory organ on the other sensory organ in relation to disable persons. Sixty boys and girls of M.M. (Mild hearing loss of both ears), M. Ed. (Mild hearing in one ear and moderate loss of hearing in the other), N.M. (Normal in one year and mild loss of hearing in other), N.N. (Normal in both ears). Each selected variable has been recorded and treated statistically. The result of this study indicated that above 62.5% of the hearing impaired students were possessing above normal vision.


Clifford\textsuperscript{21} investigated whether or not identifiable difference existed in the patterns of semantic and syntactic functioning between deaf and hearing children. Sample consisted of 137 deaf students 13 to 16 years of age and 151 hearing subjects in the seventh grade of public junior high school. Three linguistic tests were given to all the subjects. The vocabulary section of the Iowa test of basic skills were used as a criterion measure for semantics, the expression section of the California comprehensive test of basic skill, was used as a criterion measures for semantically plus-syntax, and the Wood Ward Nonsense Test of structural meaning was used as criterion measure for syntax. The result showed that deaf subjects were significantly different in the criterion variable rector scores with the working and poor class subjects lower than the middle class ones.

Minter\textsuperscript{22} compared deaf and hearing freshman male college students on the variables of reaction time and movement time. Forty deaf male freshmen at Gallandet College, Washington D. C. and 50 hearing male freshmen at Catholic University, Washington D.C. who were enrolled in the required physical education programme were tested on two tasks. The first was a simple reaction time test requiring subjects to depress a telegraph key with the index figure when a visual stimulus appeared. The second was a complex, reaction and movement task requiring the subjects to extinguish 10 lights in random


sequence. Each subject had 10 trials on each of the two tests. Results of the simple reaction time test showed no significant difference on reaction movement time test however deaf were found superior.

Kirk\textsuperscript{23} stated that educating the deaf child required perhaps more technical skills than teaching a child with any other type of handicap. The greatest challenge of the teacher (including physical educators) of teaching impaired is effective and efficient communication.

Smith\textsuperscript{24} conducted a study on dual sensory impairment: rehabilitation and beyond. They had been much discussion in the last few years about the needs of people who have some degree of both a hearing and a visual impairment. This artisan outlines in brief the work of the Leeds Incorporated Institution for Blind and Deaf People and its attempt during the last twelve years to meet such needs and to grapple with some practical methods of restoring the ‘state of confidence’ in the description used for the rehabilitation process which addresses the social implications of dual sensory loss in elderly people.

It is proved that dual sensory loss involving visual and hearing impairments are associated with a significant decrease in function, compared with the effect of a single sensory loss. Almost 25\% of people with visual impairment was identified as having some degree of hearing loss.

\textsuperscript{24} Martin Smith, "A study on Dual Sensory Impairment: Rehabilitation and Beyond" British Journal of Visually Impaired, Vol.10, No. 3, Nov. 1992, p. 25.
Butterfield's\textsuperscript{25} investigation was designed to compare and analyze the fundamental motor balance skill of hearing impaired children through utilization of criterion reference assessment tool. This investigation attempted to ascertain qualitative differences with this population in the skill of walking, running, jumping, throwing hopping, skipping, starring, climb up, and balancing. In addition, the investigation attempted to determine if qualitative difference in skill performances were related to age and sex degree of hearing loss in decibel and etiology of hearing loss of children. 132 hearing impaired children between the ages of 3 to 14 were selected Ohio State University Scale of Inter – Gross Motor Assessment was used to gather on the children gross motor performances while selected items from Bruininks Oseretsky Test of Motor proficiency was utilized to obtain information relative to the subjects static and dynamic balance capabilities. The children were individually assessed by the principle investigator at their respective schools. In performing an assessment the evaluation permitted three trials for each Gross Motor Skills, and two trials for each Balance task. Explicit direction and skill demonstration were given prior to the execution of each skill. Scoring was based on careful observation of child's meteoric behaviors in performing a skill with companion of that performance which the criterion outlined in the respective tests materials. Following conclusion were obtained - i) In terms of the fundamental motor skill, both balance tasks and/or advanced chronological age, resulted in improved

performance, ii) The other skill walking does not appear to depend on age, at least within the age range investigated in this study.

Delforge\(^{26}\) investigated the attitude of physically handicapped and non handicapped college student towards physical activity. An attitude inventory using the somatic differential technique was administered to 100 males and females graduates and under graduates students. 25 subjects were selected at random from each of the following standard population. 1) Ambulatory physically handicapped 2) Wheel chair physically handicapped 3) Non handicapped 4) college athlete. Subjects in these four groups were asked to judge the following six dimensions of physical activity against seven semantic differ initial scales 1) as a social experience 2) as a means of health and fitness 3) as a pursuit of vertigo 4) as an aesthetic experience 5) as a catharsis 6) as air ascetic experience. The general hypothesis advances in the study was that when compared with the handicapped students the physically handicapped college students possess unique and distinguishable attitude towards physical activity.

Analysis of variance technique was used to test the various null hypotheses in this study. No significance difference in attitude towards physical activity in general or towards each of the six dimension of the physical activity

was found among the four main study groups. All groups compared expressed significantly more positive attitude towards physical activity as a social experience and as a means to health and fitness as an aesthetic experience and as a catharsis than they did towards physical activity as the pursuit of vertigo and as an ascetic experiences. Attitudes expressed by male and female handicapped students towards an ascetic experience, were significantly less positive than for all other dimensions.

Samario\textsuperscript{27} conducted a study to determine if levels of cardiovascular fitness would correlate significantly with response time in limner educable mentally retarded or normal boys. The subjects were 20 of each category in the age group of 8 to 10. Each group of subjects were tested on four criteria – 1) normal setting pulse rate 2) pulse rate recovery after the Harvard Step Test 3) response to visual stimulus and 4) response to acoustical stimulus. Each group participated in seven week cardio-vascular training period. The training period included running, rope skipping and stepping up. The purpose of training period was to decrease the post exercise pulse rate. Harvard Step Test was administered to correlate with retest on response time. The correlation metric showed. 1) no significant relationship between the data of pre-test and post-test 2) the ‘t’ test on the pre-test and the post-test showed significant differences at the 0.05 level for all the items, 3) an analysis of co-variance resulted in non significant ‘F’ ratio for the mean fitness index . The mean

response to the visual stimulus and the mean response to the acoustical stimulus.

Logan and Dunkelberg\textsuperscript{28} found that individuals with moderate hearing losses were able to participate in regular physical education programme with little or no modification of activities. He suggested that for those who are educationally deaf, the instructor must utilize sense of vision in his instruction.

Beyer\textsuperscript{29} developed and evaluated a special physical education programs for emotionally Handicapped children of primary school age. Ninety-seven emotionally handicapped children between the age of six and ten were divided into two experimental and one control group. Each programs was offered twice a week in 30 minute session for a period of 13 weeks. Experimental Group A took part in special physical education programs. Experimental group B took part in regular physical education program. The control group spend an equal amount of time engaged in sensory meter training activities. To evaluate and compare the effects of the programmes the pretest, posttest, experimental design was employed. The evaluation instruments indicated achievement level in motor fitness, perceptual motor ability, intellectual and emotional maturity and classroom behavior.


Conclusion showed that special physical education programs for emotionally handicapped children were significantly more successful in the development of motor fitness than either regular physical education or sensory motor program. There were no significant differences among any programmer in the development of emotional and intellectual maturity.

Hugh\textsuperscript{30} conducted a study to determine the differences mason congenital deaf and hearing children in visual perception and selected motor fitness test items. Congenital deaf students were taken from Louisiana State school for Deaf and Baton Rouge Luciana and 60 students from Meson Elementary snood in Tangipahoa Parish Luisiana . The two experimental groups were measured on visual perception and selected miles fitness test items (M.F.T.I.) were administered to both the groups of children at different times. The findings of the Study were - 1) Multi-variable analysis of variance used in this study indicated a significant difference at 0.01 level between the following variables of two different experimental groups. (a) visual perception (b) static balance (c) dynamic balance (d) agility (e) speed (f) power (g) cardio respiratory endurance (h) kinesthetic sense (i) arm and shoulder girdle strength and (j) endurance in congenital deaf and hearing children 2) The analysis also indicated no significant difference between the abdominal strength and speed at 0.01 lend between congenital deaf and hearing children.

Developmental information can be obtained for all motor patterns that are frequently utilized in the instruction of physical education. Comparative studies conducted on handicapped populations by Rarick, Auxer, Alder and Fraiberg\textsuperscript{31} discovered that although the special needs child was behind his/her peers in motor performance levels, there is evidence to support the concept that the development at approach was similar. Thus it is supported the concept that the developmental approach is appropriate for both handicapped and non-handicapped population.

In Physical Education, there was an interesting study of the handicapped by Pearson\textsuperscript{32} which revealed that there was a high level on non-participation in games at school and he attempted to clarify the situation. He found that non-participation was greatest in the lower ability bands, a particular unfortunate state of affairs which calls for a revision of altitudes and policies on the part of those who organize physical activities in schools.

Launita\textsuperscript{33} investigated the effect of a 12 week physical fitness training maintenance programs on the performance of selected trainable mentally handicapped students. The five components measured were body composition, cardio-respiratory function, abdominal strength and endurance and flexibility.

General conclusions drawn from this study are – (1) a 6 weeks training programs produced significantly gains on the measured components of the test among the Trainable Mentally Handicapped Students. (2) a 6 weeks maintenance programs following training was effective in sustaining fitness level of the Trainable Mentally Handicapped Students.

Lindiman\(^{34}\) investigated the motor performance of exceptional and non-exceptional children in the physical education main stream. 73 students classified as exceptional children and 137 as non-exceptional children. They were administered the standing broad jump, the 50 yard dash, the soft ball throw for distance. The findings indicated that there was no significant difference between the exceptional and non-exceptional students in standing broad jump. However, there was a significant difference in the softball throw and 50 yard dash.

Fait\(^{35}\) points out the physical education program for auditory handicaps at all levels should include variety of activities for all round physical development as well as "specific course which develops cardio respiratory endurance, coordination, flexibility, and muscular tonus. Deaf student enjoy competitive play and play to win, but more important than winning or loosing are social contact provided by the game and with the good hearing.

\(^{34}\) Cynthia S. Lindiman, "Motor Performance of Exceptional and Non-exceptional Youth Children in Main Stream Physical Education," *Completed Research in Health, Physical Education and Recreation* 22 (1980):158.

Leaderberg\textsuperscript{36} observed deaf children, in free play with their deaf peers familiar hearing play-mates and unfamiliar hearing children. The most complex and successful interaction were found with deaf peers. Comparison among deaf-hearing dyads indicated that familiarity was important to the quality of interaction. Hearing children were more responsive and used more visual communication when communicating with a deaf friend and an unfamiliar deaf child. He concluded that one-to-one situations may improve the quality of interaction between deaf and hearing children.

Dresen\textsuperscript{37} and his associates conducted a study on aerobic energy expenditure of handicapped children after training. The effect is reported of 10 weeks physical training programme, consisting of three sessions with a total duration of two hours weekly on the physical work capacity and efficiency of physically handicapped children aged 8 to 14 years. The program for the experimental group (n=6) was an intensification of the usual school Physical Education activities. The control group (n=5) received the usual Physical Education. The intensity of training was measuring by heart rate recording. In the experimental group, attempts were made to achieve heart rate values higher than 160 beats /min as long as possible. The relationship of oxygen


uptake (VO2) to heart rate and to workload was determiners before and after the end of the training programs by submaximal bicycle ergometer tests. After the training programme, a significant decrease in VO2 at different workload was found (oxygen uptake /workload remained unchanged). No effect of the training program on the relationship of oxygen uptake and heart rate was found. The implication of this study is that children can perform the same amount of external work after training as before training but with a lower expenditure of aerobic energy. The decrease of the oxygen uptakes for the workload used could be induced by enhanced coordination movement.

Arber and Cooper\cite{38} conducted a comparative study on functional disability among men and women. Socio-demographic gender differences exist and affect adjustment to chronic health problems. Compared with men, women experience more chronic health problems, are likely to be financially disadvantaged, and are more likely to be simultaneously employed and acting as caregivers. Older women are more likely to experience severe functional disability than men. As women age, they may experience changes in their social support network and sense of control. In all, women are at risk for aging with socio-demographic and physical burdens that may influence adjustment to hearing loss. The result shows that women are more likely to experience severe functional disability than men.

Pohelman\textsuperscript{39} determined the effects of an experimental physical education programs which combined with jogging walking callisthenic and individual exercises and a new game on the physical fitness of 20 visually impaired children (15 male and 5 female). Each subject was pre-tested and post-tested using modified version of AAHPER special fitness test for mentally retarded. It was concluded that the participation in a planned physical activity prename improve the physical fitness of visually impaired children.

Nelson, Palmer, Myer and Nascone\textsuperscript{40} conducted a study on the rate of auditory perceptual learning among the adults. The intention of this study was to quantify the extent and rate of adult auditory perceptual learning of previously inaudible consonants across specific condition, and reverberation in a carefully defined subject population. An experimental design was conducted to evaluate the test/retest reliability of the Nonsense Syllable Test (NST) in quiet, noise, and noise and reverberation as presented in this particular experiment. Thirty subjects with ages and hearing losses similar to the main experiment groups will complete the computerized administration of the NST four times over two test sessions (1 wk apart). Test-retest reliability will be evaluated for the three outcome measures (percent correct, response time, confidence). A computer program for the administration, scoring, and analysis of the NST being used as the outcome measure in this study has been completed. The test result shows


\textsuperscript{40} Charls T. Nelson, Catherine V. Palmer, Shelley Myer and Melissa Nascone, "Qualifying Auditory Perceptual Learning Among Adults." \textit{American Journal of Audiology}, Vol. 187 No. 12 1996, pp. 11-12
that the adults have a great range of auditory perceptual learning in varied situation.

Rowe\textsuperscript{41} tired to provide information about motor creativity of school children having mild hearing loss in guided movement exploration on play apparatus named Lind Climber. Sixteen retarded children were given individual work on the Lind Climber, for fifteen minutes each day and five days in a week, for four weeks. Video – data were collected before and after the experimental period. Data on sixteen normal student were also collected for the purpose of comparison of the performance. Data was analyzed and a significant difference was observed in respect of trials on motor fluency and motor originality, and between groups on motor originality. Thus it was found that mildly hearing impaired pre-school children were more original and fluent in their movements after the four week guided programme than they were before the programme.

Lubin\textsuperscript{42} investigated changes in motor creativity of 24 pre-school deaf children of 3 - 6 year age group, after a four week experimental period, a guided movement exploration on a piece of playing apparatus, called London Trestle Tree. Data were collected on Motor Creativity in action and movement, and the Lubin Motor Creativity Testing Protocol (derived from the


Shercil Row Cubin Adaptation of Wyrick's Motor Creativity Test). Children were video-taped before and after four weeks of experimental period, in trials of a five minute period.

The subjects were randomly assigned to trials in experimental and control groups. During the four week period, the experimental group in trials was exposed to guided movement exploration for 15 minutes, five days per week, while the control group also participated on the apparatus for there same duration of time but without guidance or instruction. It was found that preschool deaf children exposed to 20 days of guided movement exploration on the apparatus improved significantly over the control group in motor creativity measured by Torrance Test but no significant when measured on Lubin Protocol. The findings have implications for teaching methodology used with pre-school deaf children.

Garstecki and Erler\textsuperscript{43} studied on gender difference in auditory function on the communication profile adjustment among the adult performances. The communication profile influence in interacting sensory psycho-social and economic variable to hearing loss. Adjustment to acquired, mild- to-moderate hearing loss by advantaged older women and men was examined using the Communication Profile for the Hearing Impaired (CPHI). Correlation analyses revealed relationships between scales to be similar for women and men.

\textsuperscript{43} Dean C. Garstecki and Susan F. Erler, "Gender Difference in Auditory Function about the Influencing of Interacting Sensory Response." \textit{British Journal of Audiology} August, Vol 32, No. 22, 1999, p. 78.
Controlling for socio-demographic and hearing variables, group responses for the majority of CPHI scales did not differ significantly. Six scales differed significantly, and those results are discussed. When compared to men, women assigned greater importance to effective social communication, were more likely to use nonverbal communication strategies, reported greater anger and stress, and reported greater problem awareness and less denial associated with hearing loss. The CPHI is a useful tool for specifying parameters of perceived communication handicap for both older men and women.

Girmsley\textsuperscript{44} studied the effects of normal cueness, visual cueness, and visual deprivation upon the acquisition and rate of learning of a balance skill using a selected deaf population and a comparable population of normal cueness, visual cueness and visual deprivation upon the acquisition and rate of hearing of a balance skill between congenital deaf and acquired deaf. Sixty students from each North Car School were selected randomly of the 60 deaf subjects, there were 39 congenital deaf subjects, 12 acquired deaf subjects, and 9 subjects whose cause of deafness was unknown. Student ranged in an age range from 12 through 15 years of age with the average age of 11 participants being 13 years. The study group was done between males and females. Each subject was tested while subjected to three different environmental conditions. The subjects were tested for five one minute trial period on the dynobelmeter while subjected to the following conditions :-

Utilization of normal visual cues. 2) Utilization of selected visual cues which consisted of an eight feet red line, four inches in width, place four feet in front of the subjects at eye level. 3) Utilization of able fold to eliminate visual cues. All subjects were divided into three random groups in order to counter balance and rotate the subjects in different tests. A three way analysis of variance for repeated measures was also used to determine the significance of the differences with in each group. Orthogonal comparisons were used to determine the source of significance, when a significance F ratio was found. The following conclusions resulted from this study. 1) Normal hearing individual balance was significantly better than deaf individuals when tested under conditions of normal cueness visual are cueness and visual deprivation. 2) Deaf individuals learn as significantly as normal hearing individuals on balance as measured by the dynobolometer. 3) Congenital deaf individuals on the three tests of balance. 4) Deprivation of visual input significantly impairs balance performance of both the normal rearing and deaf individuals. 5) Visual cues significantly help the deaf population on balance performance but do not help the normal hearing population. The congenital deaf balanced significantly better with the use of visual cues than they did using normal cues. There was no significant difference in the balancing the normal cue and visual cues tests of balance.
Philips and Summers\textsuperscript{45} carried out an investigation on 115 college women. They were tested on 12 positional measures of kinesthesia. Each woman was classified as a fast and slow learner on the basis of improvement shown during 24 class periods of bowling. Differences between the mean kinesthetic scores were tested for the fast and slow learning groups and for entire group between preferred and non-preferred arms. The result showed that (1) there is a relationship motor learning and positional measure if kinesthesis, (2) the kinesthetic sense is more important in the early mages of learning a motor skill rather than in the later stager, (3) there are real differences between preferred and non-preferred arms in kinesthetic perceived.

Kusche, Garfield and Greenberg\textsuperscript{46} examined the social attributions of deaf adolescents in a residential school and compared them to hearing controls. Examination was held on understanding of causes (effort, chance, ability, assistance, hindrance etc.) emotions (pride, shame, surprise, confidence, hopelessness, thankfulness, anger etc.) and linkage between causes and effects. The deaf adolescents (mean age: 17 years) performed quite poorly, being comparable to first grade hearing children. While no age effects were found in the deaf adolescents, language ability was positively related to greater understanding for all areas. Particular attribution errors were made which may be related to academic achievement and self-esteem.


Nash\textsuperscript{47} explored some of the positive effect of auditory deprivation on tactile kinesthetic modality of paralinguistic deaf subjects between 9 to 11 years of age as they performed a learned rhythmical key tapping task under three different conditions of visual feedback. The sample population consisted of 16 profoundly deaf and 16 normally hearing subjects. Three questions were investigated (a) what is the difference of deaf and normally hearing children in key tapping behavior on over all three treatment conditions? (b) What are the differences among the three treatment conditions in their effect on key tapping behaviors over both normal and deaf group? (c) What is the interaction between the groups and treatment condition in their key tapping behaviors? The result of this study suggested that the educators cannot assume that the deaf children use tactile kinesthetic information in the same way as do normally hearing children.

Cherny\textsuperscript{48} in his study of kinesthetic position selected twenty eight college women who were given the initial test, 5 weeks of training and the final test. Four tests of kinesthetic positioning from young's battery were used. Result showed that subjects consistently were more accurate in positioning arms than legs. Training significantly improves the subject's ability to raise the arms to a sideward position of 90 degree.

\textsuperscript{47} Kenneth Robert Wash, "The Effect of Auditory Deprivation on a Key Tapping Task," Dissertation Abstracts International Vol. 34 No.5, February 1974, p. 4883-A
Clarke and Clarke\(^{49}\) stated that physical education activity can be an excellent means of integrating the deaf student into social situation where ability speaks for itself. This relationship should be cultivated by Adaptive Physical Educators who should guide the student into activities for which he is prepared physically, mentally, and in which he has expressed some interest. Not only will counteract the tendency to withdraw socially but will help the deaf and hard of hearing students to develop naturally his social talents and abilities.

Schindele\(^{50}\) used self-concept score to compare the social adjustment of fifth and sixth grade visually handicapped and sighted children. The visually handicapped students chosen for the test were from residential and integrated schools. The results indicated no significant difference between any pair of groups. It also indicated that elder pupil in residential school were relatively less well-adjusted where as in integrated school elder children were found to be better adjusted. Schindele suggested that while social adjustment of visually handicapped students in regular (integrated) schools have developed in a realistic surroundings, the social development of the visually handicapped in a residential school is mainly the result of being brought up in a sheltered and unrealistic environment.


Zoerink\textsuperscript{51} investigated whether differences in leisure attitudes exist between young adults with congenital orthopedic disabilities and able-bodied young adults subjects. 31 persons with congenital disabilities and 35 able-bodied persons, were purposely selected and asked to complete a measure of leisure attitudes.

Analysis of factors revealed that the able-bodied group responded more positively to the factor “linking leisure” than the congenitally disable. Analysis of the factor positive spontaneity indicated that the persons with congenital disabilities saw themselves as being less spontaneous. Upon examining the composite score using ANOVA, the group with congenital disabilities displayed a lower leisure attitude score.

Gate House\textsuperscript{52} on hearing threshold, age, personality, intelligent (IQ) affect the hearing loss. As a results of investigations of speech recognition in noise and central auditory processing reveal increasing difficulty among adults as they are aged. This study addresses on the gender differences, probably because of their small sample size. In a study assessing, the role of gender in dichotic sentence identification. He found a greater left ear deficit for men age 60 and older than for women. Potential relationships among age, gender, and other measures of central auditory processing are unknown. Personality factors


contribute to adjustment to hearing loss, but in few cases, it is informed in regard to the reports that adjustment to hearing loss of one older adult is affected by hearing threshold level, age, personality, and intelligence (IQ). He found that age and IQ contribute more to the variance in handicap for men, where personality factors play a greater role among women.

Maxfield and Fajeld\textsuperscript{53} found that a group of partially blind children were more developed than an age-matched group of totally blind children. In this study, the result suggested that the totally blind students are more docile, have less initiative, were active and out-going ,more introverted and possibly more co-operative than partially seeing children.

Mercier, Audet, Hebert, Kochette and Dubois\textsuperscript{54} conducted a study to evaluate the relative impact of motor, cognitive, and perceptual deficits on functional autonomy with elderly people. Two different approaches were used for measuring functional autonomy: the Functional Autonomy Measurement System (Systeme de Mesure de l'Autonomie Fonctionnelle [SMAF]) and the Assessment of Motor and Process Skills (AMPS). The results of the confirmatory factor analysis show that motor, cognitive, and perceptual factors all make a significant contribution to the variation in functional autonomy. The factors that make the greatest contribution in explaining the variance in


functional autonomy are, in order of importance, the motor factor, the perceptual factor, and the cognitive factor.

Halaline and Berge\textsuperscript{55} studied how impairment is thought to affect individual's ability in cultural variable. The notion of spread deficit in some functions also spreads to others which had been identified in different culture. Murphy provides the example of how the waiter gives everyone a menu except the man in the wheel chair, assuming that he can not read. He had concluded that people, who are disabling in one way, are gifted in another ways. Blind people are good listeners, the lame one good adviser, deaf and dumb people are spell-binding attitude in nature.

Levy\textsuperscript{56} studied in learning difficulties in relation to the sensory impairment. He made a survey and reported that the between two – three percent of the population of United kingdom have a learning difficulties which amount to over one million people with learning difficulties. Sensory impairment is particular common in people with serve learning difficulties. It is also reported that 48\% of people with learning difficulties have impairment in one sensory domain and 18\% are doubly impaired. It is also found a world wide average occurrence among people with severe learning difficulties of 40\% with sight problems, with a range of outcome of 23-57\%. Hearing problems were also

com mom in people with severe learning difficulties, with an average occurrence of 35% and a range of 5-60.

Bess, Lichenstein and Logan\textsuperscript{57} studied how the hearing loss effect on health and well-being. Four frequency pure-tone averages for Group – I were <5dB, compared with 10 dB and 25 dB for Group - II and Group - III respectively. Like many health-related investigations, investigations of hearing and the impact of hearing loss have focused on female research populations. Results of studies from a variety of disciplines suggest that adult development is influenced by biological change, psychological traits and social process. Both Cohort (normative) and individual (non-normative) effects including age, gender, socioeconomic status and indicates how persons grow older. Self-perceived hearing ability is not only age dependent, but may have relationship to measurable hearing thresholds. They also suggest that regular hearing evaluation for women of all ages could increase early detection of hearing loss and document declines in function.

A great deal of work has been carried out by psychologists and Sociologists on disability and rehabilitation in Northern (European and North American) Societies. Robert Edgerton studied on the subjects of sensory disabilities and motor disabilities persons. He made an attempt to formulate

general cross-cultural perspectives on the above disabilities. He had concluded that the disable persons have the positive attribution of super-natural powers.\(^5^8\)

Mann\(^5^9\) conducted an investigation with play observation of young children. The first purpose of the study was to develop a methodology for observing young children to play in their classroom situation without assess to sound. The second purpose was to use a set of data collected under conditions using methodologies which are equivalent, to compare the play behaviors of young deaf children to the play behaviors of their hearing counter parts. Five profoundly deaf orally trained children aged 3 to 5½ years old and five hearing children were selected as subjects. The hearing subjects were matched as closely as possible to the deaf subjects for age, set, race, and socio-economic level. The procedure involved collecting tape description of observed play behaviors exhibited by the subject during "free play" now in their classroom. The tape description were then typed and coded at one minute interval with respect to the frequencies in each category of social play socio dramatic play and organization of play behaviour. The analysis involved examination of the frequency data in terms of differences in play styles and play development across ages 3,4 and 5 and between the two groups of subjects deaf and hearing. A chi square analysis was done for each category of play between the deaf and hearing groups. The result showed that the methodology developed in

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this study was both consistent and objective. The results of the comparison of play behaviors, between the deaf and hearing subjects suggested that the difference is qualitative rather than quantitative. The difference between the groups was neither within the sequence nor rate of play development but rather with in the number of behaviors observed in each category of play. Although study was limited by a small number of subjects, several implications of both poach at and heuristic value was noted. Among these were restriction of profound deafness on verbal languages environment, experience and education. The study also suggested that play is sear of and an index to cognitive development.

Desai, Pratt, Lentzner and Robinson\textsuperscript{60} conducted a study on sensory impairment and the quality of life inhabitance. For the elderly, sensory impairments increase vulnerability and limit the quality of life. Dimming eyesight and failing hearing can reduce physical, functional, emotional, and social well-being. Visual and hearing impairments decrease independence in performing the activities of daily living, getting from place to place or communicating with others. Isolation, depression and poorer social relationships often accompany sight and hearing loss. They account for 37 percent of all hearing impaired individuals and 30 percent of all visually impaired individuals. Moreover, nearly 37 percent of all visits to inhibitory effect for eye care are made by persons 65

years of age and older. It was concluded that sensory impairment increase vulnerability and limit the quality of life.

Boucher\textsuperscript{61} conducted a study on kinetic synaesthesia. Kinesthetic Synaesthesia refers to visual and proprio uptime inter-connections and to how visually perceived movement rectors can be experienced as kinesthesia. He was concluded that sight and touch is very well inter connected in such a way as to may synaesthesia possible since tactile movement perception can stimulate the visual cortex of the blind person.

Brozio\textsuperscript{62} conducted a study on the touch as a sensory response in relation to age. He has highlighted that touch is affected by age. In advancing age our corpuscles in our fingers become less organized and show degenerative changes right touches are not detected. An elderly person may not fed their loved one paling or holding their hand and this could leave this elderly persons may also not feet slights bumpy into objects war could lead to bruising

Kerper and Martinet\textsuperscript{63} conducted studies to determine differential relationship among the teacher perceptions of student's expression of effort, teacher expectation, grade, school, teacher sex and being handicapped and

\textsuperscript{61} Marc Boucher, "Kinesthetic Synaesthesia: Phenomenology of Visually Impairment." \textit{Dissertation Abstracts International} Vol. 35 No. 15, June 1986, p. 3475-A
non-handicapped children integrated together in Physical Education classes. It is interesting to note that children's being handicapped or non-handicapped was not significantly related to motor performance variability in this study.

Baumgartner and Horvat\textsuperscript{64} in their study indicated that the handicapped individuals deserve the same quality test, testing protocols and norms which we have worked long and hard to produce for non-handicapped individuals. The adapted and measurement professionals must join forces to develop the much needed tests and norms for handicapped population.

Embler\textsuperscript{65} conducted a study on the disable students at school level among different grades to measure the performances. For this purpose California test was employed. It included three status approaches (Cross-sectional, Cross-sectional with confidence level interval and three years rolling average) and two value added approaches (unadjusted and adjusted). The results showed that there was a significant difference in the performances of the students with disabilities among all different grades.

Review of related literature has provided a lot of information to enrich the present study. It gives a deep knowledge and a new look to continue this study. It also provides different valuable points for the research works which serves as the guide to the scholar.