Chapter – II

Review of Related Literature
Research studies on the motor ability, socio-economic status and physical fitness of handicapped boys were found to be very limited. However, relevant studies available from the library of Degree College of Physical Education, Amravati have been reviewed in this chapter.

Milgram (1981) found that the cognitive stages of retarded individuals are structurally different from those of the non-retarded. The retarded persons' stages, he argued, are likely to have certain traces of more primitive developmental stages and are apt to give way to regression to those earlier stages. Consequently, he maintained, that retarded persons employ less advanced reasoning than non-retarded persons with matching mental age.

Rubin and On (1981) compared mental age matched retarded children on two tasks. One task involves identifying and the other constructing and perspective of another person on a stimulus array. Both groups of children were from public elementary schools. Their intelligence quotient averaged 73 and 105. Their mental age averaged 7.7 and 8.5 years respectively. There was apparently no screening of organic cases. However,
the two groups did not differ reliably on either task; but the retarded group was significantly inferior to a chronological age matched on both tasks.

Poehlman (1980) determined the effect of an experimental physical education programme which combines a jog walk activity, calisthenics and individual excercises and new games on the physical fitness of 20 mentally retarded children (15 male and 5 female). Each subject was pretested, using a modified version of AAHPER special fitness test for the mentally retarded. It was concluded that participation in a planned physical activity programme improves the physical fitness of mentally retarded.

Hill (1978) studied the effect of prescribed exercise programme on mentally retarded male subjects with regard to arm strength, leg strength, abdominal strength, speed, flexibility, power and co-ordination and circulatory endurance. Sixty moderately mentally retarded male students were selected from 18 classes. A motor fitness test was administered to the 60 moderately mentally retarded subjects as a pre-test prior to the treatment period. The experimental group was administered a progressive physical exercise programme. Results of pre-test and post-test were analyses by means of multivariable analysis of variance. The result revealed that the experimental group made significantly greater signs than both the special activity and control group on arm strength, abdominal strength, circulo-respiratory endurance and greater gains than the control group on the speed component.
Lindman (1980) investigated the motor performance of exceptional and non-exceptional children in the physical education mainstream. Seventy-three students classified as exceptional education mainstream. Seventy-three students classified as exceptional children and 132 as non-exceptional children were administered the standing broad jump, 50 yard dash and 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 soft-ball throw and 50 yard dash.

Ivergina (1980) studied the attitude of emotionally disturbed and normal children towards physical activities. Subjects were, 80 emotionally disturbed and 381 normal children.

The finding indicated that normal children had a more favourable attitude towards physical activity than did the disturbed children.

Hugh (1976) conducted a study to determine the difference between congenital deaf and hearing children in visual perception and selected motor fitness test items. 60 congenital deaf students were taken from Louisiana State school for the Deaf in Baton Rouge, Louisiana and 60 students from Nesom Elementary School in Tangi Pahoa Parish, Louisiana. The two experimental groups were measured on visual perception and selected motor fitness test items. Motor fitness items were administered to both groups of children at different times. The findings of the study were:
1) Multivariable analysis of variance used in this study indicated a significant difference at the 01 level between the following variables of two experimental groups – (i) visual perception, (ii) static balance, (iii) dynamic balance, (iv) agility, (v) speed, (vi) power, (vii) cardiac respiratory endurance (viii) kinesthesia and (xi) arm and shoulder girdle strength and endurance in congenital deaf and hearing children.

2) The analysis indicated no significant difference between abdominal strength endurance and speed at the 01 level between congenital and hearing children.

Kasten Steven (1975) conducted a study to compare some congenitive behaviours between groups of hearing impaired and normal hearing children. Within the frame work of the study the hearing children were operationally divided into a lower-verbal group and a higher verbal group. Ten subjects were in each group and they ranged in age from 8 years to 9 years 11 months. The 30 subjects were tested individually on three cognitive tasks. It was concluded that the hearing impaired subjects were not able to adjust to an abrupt change in set as easily as the hearing subjects.

Clifford (1973) investigated whether or not identifiable differences existed in the pattern of somatic and syntactic functioning between deaf and hearing children. Sample consisted of 137 deaf subjects, 13 to 16 years of age and 151 linguistic tests were given to all 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 tests of basic skills was used as a criterion measure for semantics plus syntax and the Woodward nonsense test of structural meaning was used as a criterion measure for syntax.

The result showed that deaf subjects were significantly below hearing subjects on all three criteria variables. Middle, working and poverty class subjects were significantly different in the criterion variables vector scores with the working and poor class subjects than the middle class ones.

As mentioned earlier, Hugh found in his study that there was no significant difference between the abdominal strength endurance and speed and found significant difference in the visual perception, balance, agility, power, are and shoulder strength and endurance in deaf and hearing children of experimental group. On the other hand steven concluded that the hearing impaired subjects were not able to adjust to an abrupt change in set as easily as the hearing subjects, in his study to compare congenitive behaviours.

Keneth (1975) investigated the effect of deafness variables on human behaviour. The problem was studied under the light of psychological differentiation theory of Witkin et al. (1962) to investigate the feasibility of Witkin’s Theory as an investigative framework in the study of deafness. The experimental subjects were 38 deaf children aged 8 to 14 years from
the Detroit Day School for the Deaf. The control subjects were 10 hearing children from a Detroit Grade school. The Rod and Frame Test was used to measure field dependence and field independence. The portable rode and frame test was used to test and compare the deaf and hearing subjects in field dependence and field independence. The reliability of portable Rode and Frame test was demonstrated by high significant split half correlation. The results were found that deaf are formally different from the hearing subjects in degree of structural control and deafness and in intellectual performance ability to experience.

Wayne (1966) investigated to see if mentally retarded boys differ from the intellectual normal boys in physical fitness. 30 educable mentally retarded boys were matched with the 30 normal boys of comparable chronological age and another group of 30 days of comparable mental age. All groups took the AAHPER youth fitness test battery. On analyzing the group test score, it was found that the mean performance of the mentally retarded boys are almost similar, midway between the mean performance of the two normal groups.

Research studies in the area of deaf and dumb and blind boys and their physical fitness found to be. Very limited. However, researcher cited here some studies in this area from all over India and the world.

W.G. Hopkins (1978) assessed physical fitness of blind boys as compare to normal boys blind children were significantly less active than
normal children when their different activity levels taken into account. The fitness assessed by a step test was significantly reduced in the visually impaired children. It is concluded that totally blind children are less fit than other children at least partly because of their lower level of habitual activity.

Gaetet (1977) analyzed physical fitness of blind boys as compared to normal boys. He used the test of maximum oxygen uptake while performing physical exercise. It is found that blind children have significantly lower maximum oxygen uptakes as compared to normal boys.

Pochlman (1980) determined the effect of an experimental physical education programme. Which combines a jog walk activity, calisthenics and individual exercises and the new games on the physical fitness of 20 mentally retarded children (15 male and 5 female) each subject was protested, using a modified version of AAHPER special fitness test for the mentally retarded. It was concluded that participation in a planned physical activity programme improves the physical fitness mentally retarded.

Long (1932) compared motor abilities of deaf boys (51) and girls (26) with a matched group of hearing children. Hearing children outperformed deaf children on the balance test this was only statistically significant difference. Between the two groups on a series of psychomotor tests.

Morsh (1936) compared psychomotor performances of deaf and hearing individuals, ages 5 to 26 years no significant difference is
performance were found, although in steadiness test, the performance of deaf students was superior.

Brace (1936) compared the balance ability of deaf (52) and hearing (59) boys. Boys were equivalent in performance in individual skills such as high jump. Base ball throw, broad jump and so yard dash. Hearing boys balanced longer than deaf boys. Brace was the first researcher to review performance based on etiology and degree of deafness. The congenital total deafness group was superior in static balance to congenital partial acquired total, acquired partial, and unclassified groups.

Bur bank (1936) assessed balanced skill in deaf boys (137) with a hearing loss of greater than 65 dB. The congenital etiology group performed better than the disease caused. Deafness group in nine balanced skills. The balance ability of the meningitis etiology group was most affected compared to nine other deafness etiologies.

Mykle bust (1964) evaluated the manual dexterity and locomotor coordination of 80 deaf males, ages 12 to 21. In manual dexterity, deaf males were within the 50th percentile of that of hearing males for speed, but only in the 15th percentile for accuracy. Myklebust also assessed locomotor coordination of 75 deaf and 275 hearing children who ranged from 7 to 15 years of age. Deaf children performed less well in these tests and in comparisons on the basis of etiology, the meningitic group performed least well.
Boyd (1965) studied motor skills of deaf boys (ages 8 to 10 years) from a residential school. Deaf boys scored significantly lower than hearing boys in static balance in all age groups. In locomotor coordination, hearing boys scored higher. There was no significant difference between 9 and 10 years old hearing and deaf boys in manual dexterity speed; however, 9 year old deaf boys scored significantly higher.

Vance (1968) compared the motor skills of 44 deaf and hearing children, ages 5 to 13 years. This study included deaf children from nonresidential schools. Hearing scored significantly higher in balance, tracing speed, grip strength, 50 yard dash, squat thrust, and ball throw. Hearing girls scored significantly higher on grip strength and squat thrust; however, deaf girls scored higher in ball throw.

Logan (1969) examined hearing and hearing impaired girls (ages 10 to 20 years) on 6 tests of static and dynamic balance. Overall, hearing boys and girls performed significantly better than hearing impaired children and youth.

Brassett (1971) assessed athletic abilities of deaf and hearing boys and girls, age 12 to 14 years. Deaf group performed below the hearing groups in maximal breathing and forced expiratory volume. Hearing participants performed significantly better in agility and hearing girls significantly better in leg strength. There were no significant difference in
eye hand coordination, eye-hand reaction time, running speed, or arm strength

Lindsey and O neal (1976) compared the performance of 31 deaf 8 years olds with 77 hearing 8 years old children were deficient in static balance and performed less well than hearing children when visual input was removed deaf children failed more dynamic balance items than hearing children.

Gayle (1977) assessed the static and dynamic balance abilities of hearing and hearing impaired children 6 to 12 years of age. Hearing impaired subject were found deficient in most tests except for left static balance.

Geddes (1978) evaluated 11 Deaf and hearing impaired subjects, 4 to 6 years of age, on static balance, body awareness, locomotion and dynamic balance, manipulation, climbing, throwing catching, and kicking children performed at age level in 11 of the 18 items.

Campbell (1983) studied psychomotor differences between Hearing, Hearing Impaired, and Deaf children 6 to 13 years of age. In Hearing to deaf comparisons, result indicated that the Hearing group scored significantly higher than deaf group on eight of the nine fitness items. Hearing children scored significantly higher than hearing impaired children on the 9 minute and 30 year run tests. Hearing impaired balanced longer than deaf. Children in static balance and performed better, on other fitness
skills this study concluded that higher level of hearing loss resulted in inferior motor performance.

Wiegersma and van der velde (1983) completed a series of four studies with children in the Netherlands overall, deaf children were inferior in general dynamic coordination and physical fitness and were delayed on some manual ability tasks.

Winnick and short (1986) in a comprehensive study of physical fitness, tested 686 Hearing subjects, 153 hard of hearing, and 892 deaf subject. The performances of all groups were quite similar overall, with a few exceptions.

Pender and Patterson (1982) concluded that Dead & Dumb subjects were superior in cardiorespiratory endurance and running speed. Only about a third of Dead & Dumb boys and girls were able to achieve plateau and maximal oxygen uptake in the Shephard et al. (1987) study, and their physical work capacity was below that of their peers.

Stephen Butterfield, Gails Dummer, David Steward, Lauren Liberman, and Kathleen Ellis, have developed an understanding of motor performance issues uniquely associated with the Deaf community. These individuals have become knowledgeable about unique aspects of the Deaf community and this knowledge has informed their research. David Steward (1991) provides an excellent overview of cultural aspects of sport in his book, Deaf Sport: The impact of Sports within the Deaf Community.
Goodman and Hopper (1992), in a comprehensive historical review of the psychomotor behaviour of children and youth with hearing loss, found Deaf children and youth in some cases had similar profiles to their hearing counterparts with the possible exception of balance.

Ellis, Butterfield, and Lehnhard (2000) compared the grip strength of children, ages 6 to 19 years, from a residential school for the deaf to a matched sample of hearing children from public schools and found no significant differences.

Longmuir & Bar-Or (2000) assessing the physical activity level of youths with disabilities, individuals with hearing loss had the highest level of physical activity participation compared to individuals with cerebral palsy, spina bifida, muscular dystrophy, and other chronic medical conditions such as arthritis and kidney disease. Most of the participants in the study were recruited from schools for deaf youths that provide in-school and extracurricular physical activity programmes. Of the 104 individuals with hearing loss who completed the survey on physical activity levels, 87 individuals perceived themselves as active, 49 moderately active, and 28 sedentary.

Liberman, Volding, and Winnick (2004) found no difference between motor development of children with Deaf parents and those with hearing parents and those with hearing parents. One critical area of communication relates to family medical history. Enhanced communication
will provide health benefits for Deaf children. Families should be encouraged to discuss health issues and devise appropriate preventive health strategies based on medical history.

Ellis, Lieberman, Fittipauldi-Wert, and Dummer (2005) found that deaf children (ages 6 to 11) have at least minimally acceptable levels of fitness. Comparing scores of 151 Deaf children (97 males and 54 females) to the Health Fitness Zone (HFZ) standards used in Fitnessgram, rather than to hearing children, the average number of tests within the HFZ was 4.91 out of 6 tests. High percent body fat was identified as a factor preventing children from succeeding in achieving fitness standards. Results from this study indicated similar age-related trends in fitness found within the literature for hearing children.

In the Ellis et al. (2005) study, test items were specified and modified to ensure understanding by Deaf children and these children were identified as having at least minimally acceptable levels of physical fitness.

After reviewing the above literature, it had been clear, very few researches were found to be similar or related to the present type study work. The present researcher found that the aim was to find out the difference. Physical fitness was similar for all researches but under the different circumstances and of different categories of subjects. Again the context of reviewing the previous studies related to the present study, the
researcher came across that the previous researchers had given a lot of treatment to the subjects for which the results were significant.

It was also concluded from the above studies that longer the duration of supervised physical education programme, more prominent would be the positive effect on the physical fitness of the subjects.