2.1. INTRODUCTION

The review of related literature is a key step in research process. The major purpose of reviewing the literature is to determine what has already been done that relates to one’s problem. Another important function of review is that it points out research strategies and specific procedures and measuring instruments that have been found to be productive in investigating one’s problem. Familiarity with previous research also facilitates interpretation of the results of the study. Finally these reviews give information which can either support or challenge the conditions of the investigator’s research and therefore help in future research.

The aim of the present study was to identify the functional abilities, problems and parental expectation of adults with intellectual disability. This involves assessment and interpretation of functional abilities related to personal skills, food management skills, household tasks, community living skills, work related skills and functional academic skills. Analysis of problems such as behaviour problems, sexual problems, emotional problems and social problems also is an integral part of the study. Hence the review is organized under the following headings:

1. Personal skills
2. Food management skills
3. Household tasks
4. Community living skills
5. Work related skills
6. Functional academic skills
7. Behaviour problems
8. Sexual problems

9. Emotional problems

10. Social problems

11. Parental expectation

2.2. PERSONAL SKILLS

Treffry et al., (1970) taught 11 profoundly retarded girls, aged 10-20, to wash and dry their hands and faces. The girls all tested below IQ 30 but could follow simple directions and had no major motor impairments of the hands and arms. The task was broken down into 11 steps, and prior to training none of the girls could perform all steps without assistance. Gains were most rapid during the first 3 weeks, and by the ninth week, seven of the 11 girls were able to wash and dry themselves completely when instructed to do so, though some needed occasional reminding.

A large study of an institutionalized series revealed that, with only routine scheduling of toileting, from one-half to nearly two-thirds of those with IQs of less than 30 achieved independent toilet usage (Eyman et al., 1970). Delay in the age at which training was achieved was characteristic; it was not until age 12 that the rate reached 50 percent. In contrast, of those with IQs greater than 30, 71 percent were fully trained by age 12, and virtually all were fully trained thereafter.

From reviews of related studies researchers report that significant gains in self-help skills can be achieved even in profoundly retarded adults (Berkson & Landesman-Dwyer, 1977; Watson & Uzzell, 1981).

Self help skills, particularly ambulation and toilet training, have been important in facilitating the deinstitutionalization of retarded persons (Eyman et al., 1970). Of the two, ambulation is the more critical, although, as just noted, more than one-third of the California day center population was nonambulatory. Gains in toileting ability appear to be more easily achieved
than those in ambulation, and the likelihood of major gain in mobility for those who are not walking by age 5 is poor (Eyman et al., 1975).

Villeponteaux et al., (1998) examined the validity and reliability of self-report in determining functional abilities in older adults with mental retardation. Thirty participants were interviewed twice using the index of Activities of Daily Living (ADL) and the Instrumental Activities of Daily Living (IADL) scale, which were modified to include structured probes. The participants' self-reports were compared to informant reports from their care providers. Significant test-retest reliability and a significant correlation between participants' self-report and informant reports were found. This information is useful to professionals in the generic aging service system who is now serving persons with mental retardation.

Previous research has found an unmet need for oral care among people with intellectual disability. The key factors which have been indicated are low expectations, fear of treatment, lack of awareness among carers and problems in accessing dental services. The withdrawal of many General Dental Practitioners (GDPs) from the National Health Service (NHS) may have exacerbated the latter problem in the UK. Cumella et al., (2000) assessed the extent of unmet clinical needs in a group of adults with intellectual disability living in the community who were not in contact with the Community Dental Service (CDS); and explore their perceptions of teeth and contact with dentists to identify how oral care can be improved. Interviews were completed with subjects and/or carers and a dental examination was completed. There were higher levels of untreated caries (decay), and gingival or periodontal (gum) problems among the sample than in either the general population, or in a previous survey of CDS users at day centers’ and residential facilities. The subjects were largely unaware of dental problems, and used the appearance and absence of pain to judge the condition of their teeth. They depended
greatly on their cares for decision-making and support with regard to visiting the dentist and tooth-brushing. Cares requested training in oral care and the use of dental services, and support in dealing with clients who have problems in tooth-brushing. The subjects had experienced a wide variation in the treatment provided by dentists, but had not found it difficult to access a dentist despite recent reductions in the availability of NHS dental care. They expressed a particular need for a good relationship with their dentist and for their dentist to have personal skills in relating to people with an intellectual disability. Dental screening checks and oral care training for cares should be made easily available. Care plans should include tooth-brushing and dietary issues for all clients who have their own natural teeth. There are significant training issues for dentists in developing personal skills in total communication, disability awareness and attitudes which value people with intellectual disability.

Autism Spectrum Disorders (ASD) and Intellectual Disabilities (ID) are high prevalence developmental disabilities that co-occur at high rates. Furthermore, Axis I psychopathology is known to occur more frequently in individuals with ID than the general population. The problems are lifelong and can be major impediments to independent living. Despite this, little research with adults is available to determine the effects of these disabilities on specific adaptive skills. In the study, 337 adults were evaluated using the Vineland Adaptive Behavior Scale to assess the effects of these disabilities on looking at an ID, ID plus ASD, and ID and ASD plus Axis I psychopathology group. Adaptive skills were greatest for the ID group followed by the ID plus ASD, and ID and ASD plus psychopathology. Thus, the more handicapping conditions, the greater the skills deficits observed, particularly where psychopathology was concerned. As such, accurately identifying the causes of adaptive skill deficits will likely result in more precise and effective treatment (Matson et al., 2009).
Choudhari (2004) developed a training program for acquisition of self-care (dressing) skills and communication skills. The participants were 15 moderately mentally retarded learners in the age range of 12 to 18 years. The pretest post test design was employed in the study in which the participants were exposed to the training program for a period of 8 weeks. The results revealed that the learners exhibited significant improvement in overall dressing and communication skills.

Moudgil (1970) reported that the onset of menarche in a mentally retarded girl poses difficulties for both the girl and the parents. The need for teaching menstrual hygiene is emphasized. A highly structured and concrete programme, planned with the mother, is advocated by the author for this purpose.

Personal safety has become an increasingly important issue for all families, particularly those of persons with mental retardation. Susceptibility to crime, personal injury accidents, and an increased responsibility for oneself and others in times of emergencies are some examples of safety-related issues that arise. As the exodus from large public residential facilities continues, many will be leaving settings where 24-hour supervision was provided and opportunities for accidents were minimized. For persons with mental retardation, special care must be taken to reduce substantially likelihood of injury from threats and misfortunes across a wide range of home, school, and work-related settings (Smith et al., 2002).

Integrated employment settings offer opportunity for rich and fulfilling life experiences. Unfortunately, they also offer other opportunities for risk of personal injury. Fletcher and Abood (1988) have reported that even among those with mild mental retardation and a reading level of nearly fourth grade, 57% were unable to read important product warning labels because 42% of the words were at or above the sixth-grade level. Although words such as eyes, milk, and avoid can be found on many warning labels, so many such words as
inhale, flammable, discard, inaccessible, and chlorine, are well beyond the reading ability of many persons with mental retardation.

Ozen (2008) investigated the acquisition, maintenance, and generalization effects of Antecedent Prompt and Testing Procedure (APTP) on teaching emergency phone numbers to youth with developmental disabilities. Three youths with mental retardation participated in the study. All participants were inclusion students at a regular school. A multiple probe design across behaviours with probe conditions was used in the study. Maintenance (that is one and three weeks after the termination of the intervention) and generalization across trainers probe sessions were conducted. Parents’ opinions regarding teaching emergency phone numbers to their children were also included in the study. The findings showed that APTP was effective teaching emergency phone numbers to youths with mental retardation at acquisition, maintenance, and generalization levels. Furthermore, the social validity results of the study were very positive in general.

Jameela (2013) conducted a study on the level of self determination ability of adults with mild mental retardation. The investigator examined the self determination skills with regard to personal management, choice making, problem solving, recreation and leisure time and community participation. The results revealed that adults with mild mental retardation have good performance in personal management domain and poor performance in problem solving domain.

2.3. FOOD MANAGEMENT SKILLS

Grossly inappropriate eating habits are often seen in retardation using fingers instead of utensils, oversized bites, eating too fast, taking another’s food, and throwing food and utensils. The persistence of such clearly unacceptable dining behaviour has been attributed to ineffective instruction and inadequate motivation (O’Brien et al., 1972).
Schleien et al., (1981) conducted a study to develop “independent cooking skills” in a profoundly retarded woman. The student was a 28 year old woman attending a day programme and living at home. Three skills were taught—boiling an egg, broiling an English muffin and cheese, and preparing a TV dinner. The targeted activities each represented a different use of a kitchen stove and thus had the potential for teaching skills that could be applied to other similarly prepared food. “Boiling” requires use of the top stove burner; broiling the English muffin and cheese, the oven broiler; and the TV dinner, the baking oven. The result shows that all three skills were learned and were able to be transferred to comparable equipment in another day center and the home. She was also able to generalize boiling and baking in connection with a cooking packet and pizza.

Yamaki and Taylor (2005) estimated the prevalence of obese, overweight, and healthy weight adults with intellectual disability in the community using data from the National Health Interview Survey from 1985 to 2000. Using the Body Mass Index (BMI) as a measure, the percentage of adults with intellectual disability in the obese category was higher than that for the general population and increased over the 16-year period. There was no similar detectable trend for adults with intellectual disability who were in the overweight category. Compared to their counterparts in the general population, a smaller proportion of women and young adults with intellectual disability maintained their weights in the healthy range.

Carers can have a significant impact supporting people with intellectual disabilities to make healthy lifestyle choices. Melville et al., (2009) examined carers’ training needs on diet and physical activity. A cross-sectional survey was undertaken of the knowledge and perceptions of carers supporting adults with intellectual disabilities. An interviewer administered questionnaire was used to examine carer knowledge of public health recommendations on diet and physical activity; perceptions of the benefits of healthy diets and physical
activity levels; and the carer views on the barriers to change experienced by individuals with intellectual disabilities. The result shows that sixty-three carers took part in the study. They generally had a low level of knowledge around public health recommendations on diet and physical activity. Greater importance was attributed to the health benefits of diet than physical activity. Carers rated intrapersonal barriers to change within the person with intellectual disabilities as more important, than interpersonal or external barriers to change, with significant differences in perceived barriers relevant to diet and physical activity. The study concludes that carers supporting adults with intellectual disabilities have significant training needs relevant to promoting healthy lifestyles. This highlights the opportunity to promote health improvement via the development, and provision, of effective training initiatives.

Johnson et al., (2011) conducted a study on nutrition and food skills education for adults with developmental disabilities. Twenty-eight adults with mild to moderate developmental disabilities participated in individual interviews; seven managers and 21 support workers took part in three focus group discussions. Concurrent data collection and analysis, data saturation, and a constant comparative method guided the research. The result shows that all participants indicated a need for nutrition education and cooking programs for this population. Seven major themes emerged: poor eating habits, safety concerns, low transferable skills, social relationships, staff training needs, resource needs, and limited funding. Individuals with developmental disabilities also expressed feelings of self-efficacy in learning to cook healthy food. The study concluded that there is a strong interest in and need for nutrition education and food skills programs for adults with developmental disabilities. The collaboration of multiple community partners in program implementation and delivery is essential. At the policy level, the needs of individuals with aging caregivers must be addressed and access to registered dieticians must be improved for this population.
Basquill et al., (2004) investigated attributional bias and social problem-solving deficits in two groups of adult males (aggressive vs. nonaggressive) with mild mental retardation. When presented with vignettes depicting various problem situations, aggressive participants were less accurate in correctly identifying interpersonal intent, characterized by more problem-solving deficits, and generated higher numbers of aggressive solutions to resolve problems as compared to their nonaggressive counterparts. The present results support the applicability of contemporary models of social information processing and adjustment with regard to reactive aggression to men with mental retardation.

According to Drew et al., (1996) one of the greatest needs in the area of socialization for adults with mental retardation is access to social outlets. Because adults with mental retardation lack the social sophistication that most children learn through observation, many of them are unable to plan and successfully carry out social activity. Their social problems include several facets, such as providing transportation, planning parties, asking for and accepting dates, behaving on dates, and financing social activities.

Rehfeldt et al., (2003) evaluated whether adults with mental retardation in the moderate or severe range would acquire simple meal preparation skills via video modeling. Training was conducted in the kitchen of the participants' day treatment setting. The intervention consisted of (i) watching a video of an adult with a developmental disability making a peanut butter and jelly sandwich and (ii) receiving verbal praise for each step of the task that was performed correctly. All three participants mastered the task and demonstrated generalization across settings. All three participants also demonstrated maintenance of the skill one month following mastery.

Gravestock (2000) reported that there is an increasing focus on the nutrition of people with Intellectual Disability, but less interest in the range of Eating Disorders (EDs) that they may exhibit and the bio-psycho-social impact
of these conditions. Despite diagnostic and methodological difficulties, psychopathology and ED research studies suggested that 3 to 42% of institutionalized adults with ID and 1 to 19% of adults with ID in the community have diagnosable eating disorders. Weight surveys indicate that 2 to 35% of adults with ID are obese and 5 to 43% are significantly underweight, but the contribution of diagnosable eating disorders is unknown. Such data and case reports suggested that EDs are associated with considerable physical, behavioural, psychiatric and social comorbidity.

2.4. HOUSEHOLD TASKS

Mechling (2014) evaluated a relatively new video-based procedure, Continuous Video Modelling (CVM), to teach multi-step cleaning tasks to high school students with moderate intellectual disability. CVM in contrast to video modelling and video prompting allows repletion of the video model as many times as needed while the user completes a task. CVM was evaluated using a multiple probe design across three cleaning tasks and replicated across three students. CVM alone was effective in promoting completion of tasks for two of the three students. Results suggest that CVM may be an effective instructional strategy for prompting task completion.

Johnson and Cuvo (1981) examined the effect of teaching adults with mental retardation to cook. Four adults with mental retardation were taught to cook various food items using pictorial recipes, a sequence of prompts, and a package of positive consequences. A multiple baseline across subjects demonstrated experimental control, and a multiple baseline across responses was employed to examine generalization across cooking responses. The results showed relatively rapid acquisition of the three cooking skills, substantial maintenance of the newly learned responses, and idiosyncratic patterns of generalization within and between the cooking methods. Some evidence of generalization from the training setting to the participants' home was found.
Mechling et al., (2008) evaluated the effectiveness of a portable DVD player plus the System of Least Prompts (SLP) for DVD player use as a self-prompting device to teach cooking tasks to three young adults with moderate intellectual disabilities. A multiple probe design across three cooking tasks and replicated across three students was used to evaluate the effectiveness of the portable DVD player to prompt completion of multistep tasks. Results indicated that the self-prompting, portable DVD player with the SLP was effective in teaching multistep cooking tasks that were maintained over time.

Alqahtani and Schoenfeld (2014) evaluated the effectiveness of using streaming video websites to improve, maintain, and generalize the cooking (meal making) skills of four young women (18-22 years old) diagnosed with intellectual disabilities. A pre-experimental design was used to evaluate the effectiveness of a web based multimedia program. Instruction consisted of supported viewing and imitation of cooking videos available online, with students searching for a video of the desired recipe, viewing it, and then imitating the video’s sequence of steps to complete the cooking task. Results were assessed by means of a questionnaire administered to each participant’s primary caregivers, and indicated that the structured use of the websites was effective in improving students’ meal-making skills.

Jones et al., (1999) evaluated a package of procedures which includes activity planning, support planning and training on providing effective assistance, was introduced in five community residences serving 19 adults with severe intellectual disability following a multiple baseline design. The residents were directly observed to ascertain the level of assistance they received from staff and their engagement in activity. The introduction of active support increased the levels of assistance residents received, their engagement in domestic activities and their total engagement in activity. The intervention did not affect the level of social engagement. Across individuals, increases in assistance and engagement in activity were significantly and
positively correlated. Both were significantly inversely related to resident adaptive behaviour. At baseline, staff gave more attention and assistance to people who were behaviourally more able. After the introduction of active support, receipt of attention was unrelated to adaptive behaviour and the behaviourally less able received more assistance. The disparity in activity between the more and less able was reduced. Gains were maintained in the majority of houses.

Sigafoos et al., (2007) evaluated a video prompting and fading procedure for teaching three adults with developmental disabilities to wash dishes. Video prompting involved showing video clips depicting each step of the task. All three adults reached 90 to 100% correct when video prompting was implemented. Following acquisition, video prompting was withdrawn, but performance deteriorated. Subsequently, a 3-step fading procedure was implemented in which the separate video clips were merged to form larger, multi-step segments of video. Performance reached 80 to 100% correct as the video prompts were reapplied and then faded. Performance decreased at the 3-month follow-up when prompting was removed, but stabilized at 80 to 90% correct when the third step in the fading sequence was reinstated. These data suggested a promising approach for fading video prompts.

2.5. COMMUNITY LIVING SKILLS

Aruna (2013) examined the effect of simulation as teaching strategy for teaching community skills to adults with intellectual disability. The result of the study indicated that subjects in simulated settings have shown significant improvement in community skills after receiving intervention. Further with respect to severity levels subjects with mild intellectual disability have shown higher improvement in learning community skills compared to subjects with moderate ID. The result also indicated that there was no difference in the retention of learnt skills between subjects with mild and moderate ID.
Greenberg et al., (1999) examined the factors associated with the involvement of siblings in the life of a brother or sister who has mental illness or mental retardation. Involvement was defined as the current provision of instrumental and emotional support as well as the expectation of future care giving responsibility. The result showed that the two groups of siblings showed striking differences in their expectations about their responsibility for future care giving. Almost 60 percent of the siblings of adults with mental retardation expected to assume primary care giving responsibility in the future, but only one-third of the siblings of adults with mental illness held this expectation. For both groups, competing family responsibilities limited the involvement of siblings, whereas closeness to the family of origin led to greater sibling involvement. The study concludes that the extent of current and future involvement by siblings of adults with disabilities is a function of the demands as well as the degree of closeness with the family of origin. The findings highlight the importance of clinicians' work to support and strengthen family relationships, which loom large in determining the extent to which siblings are involved in the care of a brother or sister with disabilities.

Saloviita and Lehtinen (2001) reported that paraprofessional staff working in group homes, institutions, day care centers, and sheltered workshops for people with mental retardation participated in in-service training on adult education, in which basic teaching skills were trained. The majority of the trainees wrote and implemented individual teaching programs for their clients. The results of the teaching were followed by measuring the adaptive behavior of the clients with the AAMD Adaptive Behavior Scale before the teaching began, and again, two years after. The results indicated positive gains in adaptive behavior among those clients who received teaching (n=56). A small comparison group (n=14) that did not receive teaching, showed no gains.
Martin et al., (1982) reported that a revolution in providing residential alternatives for individuals with mental retardation has made in vivo training a part of the deinstitutionalization process. The literature indicates that institutional teaching programs may not be as effective as in vivo community training. MR adults can acquire a variety of community survival skills - the skills curriculum developers must address when they devise new and innovative community integration experiences.

Adults with intellectual disability, especially those who live at home, often have special problems finding the right degree of independence from their families. Compared with those who live in the community, adults with mental retardation who live at home have a narrow range of social contacts outside their families but do experience more support from them, as well (Krauss, Seltzer & Gooman, 1992). When adults with disabilities live away from home, their parents are often concerned about providing enough support so that their grown children do not become socially isolated.

Kozma et al., (2009) examined the outcomes in different residential settings for people with intellectual disability through surveyed research from 1997 to 2007. These studies provide more evidence of the benefits of deinstitutionalization and community living and continue to indicate variability in results, suggesting that factors other than the basic model of care are important in determining outcomes.

Felce et al., (2008) examined outcomes and costs of community living: semi-independent living and fully staffed group homes. In a matched groups design, costs and quality of life outcomes for adults with intellectual disability with relatively low support needs were compared between those in fully staffed group homes (n=35) and in semi-independent living (n=35). Data were collected on participant characteristics, setting organization, various lifestyle outcomes, and costs. There were no differences in the majority of lifestyle outcome measures. Fully staffed participants had better outcomes in money
management and some health indicators. Semi-independent living participants had better outcomes for choice and community activities undertaken without staff support. Costs for semi-independent living were less. On balance, semi-independent living could offer certain cost-effective lifestyle advantages provided that sufficient attention is given to health, living and financial well-being.

Seltzer et al., (2001) examined the family involvement with adults who have mental retardation following a residential transition to a non parental living situation. They found that aging mothers were highly involved in the relocation process and had frequent contact and continued emotional involvement with their adult child. Mothers became increasingly satisfied with their level of contact with their child over time, less worried about the future, and had decreasing levels of direct care giving and contact with residential staff. Adult siblings reported improved sibling relationships over time. Siblings whose brother or sister moved out of the parental home increased their shared activities and felt less pessimistic about the future. Findings address a critical gap in knowledge about the life course roles of families of persons with mental retardation.

Housing Research at CMHC (Victoria, Ottawa and Halifax Cities, 2006) found that there is a significant unmet need for suitable housing for adults with intellectual disabilities, resulting from a lack of funding for physical facilities and supports. As well, the current system which provides housing for adults outside their family home is geared to meeting the needs of the system rather than those of the individuals it is meant to serve. Too often, individuals are housed where space is available, rather than in residences suited to their specific needs.

Making the transition from a family home to independent living can be difficult for any adult, but more so for adults with intellectual disabilities, because of their more limited ability to cope with the challenges of adapting to
new situations and taking on new responsibilities. The shortage of support services can therefore be an impediment to a successful transition.

Family members, especially aging parents, want to participate in planning for the transition to other forms of housing and to have input to the decisions that affect their family members. While most service providers share that concern, their resources are often a desire for a pro-active and responsive approach is not translated into reality.

While many housing models emerged as desirable in different circumstances, they have a common focus on flexibility and choice, reflecting the variation in the abilities, needs and desires of people with intellectual disabilities and their families. Finally, study participants advocate a person-centered approach, in which people with intellectual disabilities or their advocates are directly involved in planning and choosing housing and support services, and in which funding is tied to the individual rather than to an agency or facility.

Turley (2013) is the proud recipient of the HSC Foundation LEAP Award for a $3,000.00 academic scholarship to attend Montgomery College, Graduate Transition Program. The Graduate Transition Program is a custom-tailored learning community program for students with special needs exiting high school. GTP is a two-year, tuition-based, credit-free certificate program. The overall objective is to enable students to transition to greater independent living through functional education, residential, vocational, and life-skills services. David Turley was honored by the HSC Foundation at the Kennedy Center on November 13th 2013.

In recent years, the self-determination construct has received increased international visibility and utilization in the field of Intellectual Disability. Wehmeyer and Bolding (2001) examined the self-determination, autonomy and life choices of individuals with ID before and after they moved from a more restrictive work or living environment. The self-determination of adults...
with ID was measured for an average 6-month before and after a move from a more restrictive living or working environment to a community-based setting. Paired-sample $t$-tests indicated that there were significant changes, in each case in a more adaptive direction, in self-determination, autonomous functioning and life choices following a move to a less restrictive environment. These findings contribute to emerging evidence that the self-determination of individuals with ID is limited by congregate living or work settings which limit opportunities for choice and decision-making. Alternatively, more normalized, community-based environments support and enhance self-determination. Because self-determination has been linked to positive adult outcomes and enhanced quality of life, it is important to consider ways to enable people with ID to live and work in their communities.

Heller et al., (1998) examined whether characteristics of the environment of nursing homes and community-based residential settings are associated with the adaptive behaviour, health and community integration of adults with intellectual disability living in those settings. The specific characteristics of the environment were type of facility, size, level of residential involvement in policy-making, and the degree of variety and stimulation of the physical environment. The study assessed 249 residents with intellectual disability over a 3-year period who lived in nursing homes at baseline. At follow-up, 50 of the residents had moved to community-based facilities while 199 of the residents remained in nursing homes. The results indicated that type, size and characteristics of the environment were related to the level of adaptive behaviour and community integration at follow-up. Residents living in community-based settings had better health and greater levels of community integration than residents living in nursing homes. Residents living in smaller facilities had greater adaptive behaviour at follow-up than residents living in larger facilities. More variety and stimulation in the residential physical environment was associated with greater adaptive behaviour among residents at follow-up. Residential facilities that permitted
greater resident involvement in policy-making, and had greater variety and stimulation in their physical environment were associated with greater levels of community integration among their residents at follow-up.

Despite national and state policies promoting integrated employment, the majority of adults with intellectual or developmental disabilities (76%) are served in facility-based programs. This article of Migliore et al., (2007) focuses on whether or not this gap between policy and practice is in part due to the lack of interest of adults with intellectual disabilities and their families for employment outside facility-based programs. Results are based on the answers given by 210 adults with intellectual disabilities in 19 sheltered workshops, their respective families or caregivers (N=185), and staff members in these workshops (N=224). Results show that the majority of respondents would either like employment outside sheltered workshops or at least consider it an option. Moreover, the majority of respondents believe that adults with intellectual disabilities can perform outside workshops, if support is made available if needed. It is noteworthy that the preference for employment outside of workshops is not associated with the severity of the disability.

Based on these findings, this study supports the literature that advocates for system change policy promoting the employment of adults with intellectual disabilities in the general labor market.

Verdonschot et al., (2009) conducted a systematic review on impact of environmental factors on community participation of persons with an intellectual disability for the period of 1996–2006. Aspects of community participation included were: domestic life; interpersonal interactions and relationships; major life areas; community, civic and social life. Environmental factors included were: products and technology; natural environment and human-made changes to environment; support and relationships; attitudes; services, systems and policies. Out of 236 initial hits, 9 quantitative studies and 2 qualitative studies met the predefined selection
criteria and were included in the study. Various research instruments were used in the studies and only one study used a conceptual framework. The review allowed the identification of a number of environmental factors positively affecting participation: opportunities to make choices; variety and stimulation of the environment of facilities; opportunities for resident involvement in policy making; small residential facilities; opportunities for autonomy; vocational services; social support; family involvement; assistive technology; and positive staff attitudes. A number of identified environmental factors negatively affecting participation are: lack of transport and not feeling accepted. It can be concluded that little has been published about the impact of environmental factors on community participation. Many studies do not clearly define the concept of community participation. Research on the impact of environmental factors on community participation so far seems not to be based on a theoretical framework. Most studies focused on the impact of services on community participation in general.

Kim et al., (2001) published a summary of all US studies published between 1976 and 1988, inclusive, which measured behavioural outcomes associated with the movement of people with mental retardation from public institutions to community residential settings. Those studies found with remarkable consistency that positive adaptive behaviour changes were associated with people moving from institutions to community homes. Now, they revisit this topic to examine whether research conducted since 1988 has continued to support these earlier findings. In this review of literature, 33 of 250 US studies of residential service outcomes met the inclusion criteria of scope, quality, timeliness and design (longitudinal or contrast group study). As in the earlier review, almost all of the reviewed studies found statistically significant increases in overall adaptive behaviour scores associated with deinstitutionalization. Three studies published since 1990 reported statistically significant improvements in challenging behaviour associated with movement to the community, and nine reported no significant differences in challenging
behaviour for persons who moved compared with persons who remained in institutions.

Thorn et al., (2009) reported that historically residential facilities for individuals with intellectual disabilities have served the role of segregation and congregation with no real focus on integration into the community. More recently the focus has been to get people out of residential institutions and into community-based living settings. This work examines an approach to changing the systems and culture at a large residential facility to create higher rates of transitions to community-based living settings. A multi-phased systematic implementation approach is discussed in which each successive phase builds upon the previous phase. This approach creates opportunities for community integrated activities and then utilizes these community contexts as functional learning opportunities. Results are evaluated in the areas of community presence, community participation, community integration and community inclusion. Data indicate significant increases in each of these areas based on changing the facility focus, simplifying the intrusive accountability systems, aligning resources and teaching staff how to utilize support plans more efficiently to teach skills in functionally appropriate community integrated activities.

Mechling et al., (2005) evaluated Computer-Based Video Instruction (CBVI) to teach verbal responses to questions presented by cashiers and purchasing skills in fast food restaurants. A multiple probe design across participants was used to evaluate the effectiveness of CBVI. Instruction occurred through simulations of three fast food restaurants on the computer using video captions, still photographs, and voice recordings. Generalization and maintenance of skills were measured within the three community fast food restaurants. Results indicated that verbal responses to questions and fast food restaurant purchasing skills can be taught to students with moderate to severe intellectual disabilities through CBVI.
Taylor and O'reilly (2000) developed an intervention to promote generalization in an applied community setting. The intervention was derived primarily from experimental research examining stimulus equivalence classes and natural categories. Six young adults with intellectual disabilities were taught using (a) stimulus equivalence training, (b) multiple exemplar training, or (c) single instance training to complete a supermarket shopping task analysis. Results indicated that stimulus equivalence and multiple exemplar training were equally effective in promoting generalization with single instance training being the least effective.

Hall (2010) described the social inclusion of young adults with intellectual disabilities and to identify contexts that limit or enhance their social inclusion. Social inclusion was defined as being involved in activities, developing and maintaining relationships, and having a sense of belonging. Participants included fourteen adults from 22 to 35 years of age with a mild or moderate intellectual disability who were able to verbally communicate their thoughts and experiences. The findings of the study describe the experiences of social inclusion for young adults with intellectual disabilities (ID). Seven themes emerged from the data: work and volunteer; social, recreational, and leisure activities; reciprocal relationships; accepting environments; self-determination; living accommodations and transportation; and personal skills and resources.

In a review of research on the dimensions of community adjustment, McGrew and Bruininks (1994) found as many as eight possible factors that characterize one’s likelihood for success in community living: social integration, economic integration, employment integration, recreational or leisure integration, residential integration, personal satisfaction, community acceptance, and need for support services.
2.6. WORK RELATED SKILLS

Attention to the vocational preparation of students with mental retardation in the 1960s grew in the United States as federal and state agencies sought to encourage their participation in the work force. In recent decades they have learned that persons with mental retardation are employable and can be found working in both the public and private sectors and in regular competitive work settings as well as in “sheltered” ones. The conditions that determine their role as “workers” relate not to capacity but to opportunity. The latter is dependent on both the economic health of the general society and its concern for the well-being of its handicapped members. Before describing the vocational potential of youths with mental retardation and the process through which that potential can be realized, it is important to consider the significance of this aspect of adult lives.

A principle means of achieving self-esteem in adulthood is through “work.” Though its significance has varied with social and economic conditions, the “work ethic” still has a powerful hold on in the society. To a considerable degree the persons are what they do. Beyond its power to provide the economic means of meeting daily living expenses, work offers opportunities for participation in culturally valued activities which can bring approval from “significant others”- family, friends, employers, and co-workers- and can give a sense of their own competence. Work provides a sense of purpose, usefulness, and worth; its importance to the person’s psychological health is no more clearly evident than in the emotional distress that follows prolonged unemployment or as in the case of older people, enforced retirement.

A study of largely mildly retarded former sheltered workshop employees (mean IQ 59, range 42-70) who had placed in regular jobs found a third(34%) still employed after a period of 4 to 5 years (Brickey et al., 1985).
Particularly influential in their continued employment were supportive attitudes of their parents.

The work capacity of individuals with mild mental retardation is well established; more recently researchers have recognized work potential at more severe levels of retardation (Brickey et al., 1985; Wehman et al., 1982).

With regard to employment, approximately 51% of those surveyed believe that individuals with ID should work in special workshops. Further, 11% indicated that individuals with ID should not work at all. This belief that people with ID should work in sheltered workshops could be a reflection of the government’s current practices, in which they encourage individuals with ID to work in protected work environments (International Labour Organization, 2003). It also could be an indication that people are not comfortable working alongside an individual with ID. The remaining third of the respondents believe that people with ID are best employed in integrated environments, doing either unskilled or skilled labour. In comparison to the other countries surveyed, India is most comparable to South Africa in terms of where they believe individuals with ID should work. However, the attitudes of those surveyed in India towards including individuals with ID in the work environment were generally more negative than other countries surveyed. For example, countries like Japan, Ireland, and the United States were extremely positive, with over 55% of respondents in each of these countries indicating that individuals with ID could work in skilled or unskilled work environments.

Mithaug and his colleagues have conducted a number of studies designed to identify competencies necessary to employment at the level of the sheltered workshop. Initial investigations consisted of surveys of workshop supervisors in order to determine their views of the minimal competencies necessary to entry level sheltered workshop employment (Johnson & Mithaug, 1978; Mithaug & Hagmeier, 1978; Mithaug & Haring, 1977). Nine
competencies were identified and subsequently incorporated in a scale, the Prevocational Assessment and Curriculum Guide (Mithaug & Hagmeier, 1978). They were attendance/endurance, independence, production, learning, behaviour, communication skills, social skills, grooming/eating skills, and toileting skills.

Although competitive employment has traditionally been regarded as accessible only to those with not more than mild retardation, the recent development of “work stations” and “supportive work” in regular employment settings has opened this possibility for those with moderate and even severe retardation (Whelham et al., 1982). Work stations represent a combining of sheltered and competitive features by using the actual work setting as a training area. Selected jobs within the work setting are chosen as training sites and can be regarded as the last step in a continuum of work environments varying from adult activity programs to competitive employment.

Whereas “work station” may involve relatively permanent supervision of a group of employees, “supportive work” is intended to achieve a fully independent employee status (Revell et al., 1984). Both moderately and mildly retarded persons have benefited from this approach, which involves careful job placement, on-the-job training, and extensive follow-up. Food and custodial services are potential job sites, and long-term studies of such placements have shown that moderately as well as mildly retarded persons can perform at this level (Whelham et al., 1982).

Work is an essential part in the life of a person because it gives him status and binds him to the society. Acceptance of disabled persons at work can be viewed as society’s acceptance of these persons without discrimination. Successful performance at work makes a disabled person self-confident. However, many people with disabilities are still unable to obtain work and are dependent on others. Just as normal adults work to earn their livelihood,
persons with mental retardation also have the potential to work and earn if they are provided with the necessary training, placement and other supports. At present, many of them are idle, work in sheltered workshops or work a few hours every week. Their earnings do not reflect their capabilities. To make employment a realistic option for people with mental retardation, appropriate jobs from the open market need to be identified. Simple jobs that require minimum supervision and low risk need to be selected for successful training and placement of individuals with mental retardation. If not by their intellectual ability, they need to be selected for the training based on their generic skills and aptitude. Vocational rehabilitation helps persons with mental retardation to hold on to a job. On most occasions children with mental retardation are sent to special schools, where they learn skills that help them to develop an aptitude for certain kinds of jobs later. Research shows that generic skills and work traits improve with systematic training and also develops their aptitude in many different ways. In order to explore their relationship the following study identified generic skills, work traits and aptitude of people with mild and moderate mental retardation from different schools.

Lancioni et al., (2000) assessing the impact of frequent versus non frequent verbal prompts, delivered unobtrusively, on the task performance of two adults with severe intellectual disability. The prompts were delivered through a small pocket device with an earpiece. This device was linked via radio to a portable computer-aided system that also served for presenting the task instructions (that is, pictorial representations of the task steps). Data indicated that the frequent prompts condition fostered a higher level of on-task behavior and correct task responding.

Friehe et al., (1996) reported that students with disabilities at 2 Midwestern universities were surveyed as to their use of campus career-related services, their behavior regarding disability disclosure and accommodations, and their knowledge of ADA (Americans With Disabilities Act, 1990)
employment-related guidelines. The results indicate that most students with disabilities do not use existing career development and employment services on campus. Students frequently disclose their disability to a prospective employer; however, students are less likely to request accommodations on the job. These trends may be explained in part by the student's limited knowledge of their employment rights under the ADA.

Parish et al., (2004) reported that mothers of children with disabilities were less likely to have job spells lasting more than 5 years and had lower earnings when they were 36 years old. Further, there was a trend for them to be less likely to have full-time jobs as their children grew older.

Jain and Swadia (2012) noted that step by step independent training programme with demonstration method can improve vocational skills in a mild intellectually impaired adolescent.

Cihak et al., (2008) investigated the effect of a handheld prompting system by four students with moderate to severe intellectual disabilities to independent transition between and ordered chain of tasks was examined in a community vocational setting. It is found that the handheld system was effective to increase independent transitions from task to task.

Research has shown that identifying preferred job tasks increases productivity for participants with developmental disabilities (Bambara et al., 1994; Morgan and Horrocks, 2011; Parsons et al., 1990). For example, Parsons et al., found that work performance of participants with significant intellectual disability almost doubled when given their choice of job task. Morgan and Horrocks investigated the effect of job preference on on-the-job performance in a community setting among adults with intellectual disability and concluded that working in a chosen job increased both on-task behaviour and satisfaction, at least for two of three participants.
Most people are not intrinsically motivated to work, they need decent pay and reasonable fringe benefits. Students and other young adults with disabilities are no different. The opportunity to earn competitive wages, to receive time off for illness and vacations, and to be enrolled in insurance programs is viewed very positively. However, competitive pay and compensation arrangements are often hard to find for young people with disabilities who are starting their vocational careers. Therefore, it is not unreasonable to assume a less than optimal arrangement initially (West et al., 1990). However, these factors are important in determining the value with which the job will be viewed.

Conyers et al., (1997) examined changes in the pattern of vocational services utilized by adults with mental retardation who lived at home. The longitudinal study spanned a six-year period. A substantial minority (12%) received no vocational services and had no formal day activity. About 70% of the adults participated in segregated vocational services, just over 10% were in integrated settings in the community, and about 5% spent part of the week in a segregated setting and part of the week in an integrated setting. During the study period there was a 7% decrease in the number of adults who were in segregated vocational placements and 6% increase in the numbers who were in integrated placements among those who lived with their parents. The average work week was 30 hours for those adults who worked in segregated settings and 25 hours for those in integrated settings. Mothers of adults who worked in integrated settings were significantly more satisfied than mothers of adults who worked in segregated settings with the type of work in which the adult was engaged, the supervision received, and the work demands of the job. However, they were significantly less satisfied with the son’s or daughter’s work schedule and transportation to and from work. It is possible that their dissatisfaction with the work schedule stemmed from the shorter work week of the adults in integrated settings. It is also possible that transportation to integrated settings in the community was more difficult for
parents to arrange than transportation to agency-operated sheltered workshops, which often provide transportation.

Adult service agencies should become involved early in transition planning to begin targeting the services that will be necessary once the student leaves school. Adult service professional should collaborate with the school in establishing transition goals and identifying appropriate activities for the student during the final school years. Additionally, adult service professionals must be involved in developing information systems that can effectively track students as they leave school and should monitor the availability and appropriateness of services to be provided during adulthood (Wehman, 2006).

Wagner et al., (2005) reported that the probability of young adults with disabilities working for pay at some time during the first few years out of high school had increased significantly (from 55% to 70%) between 1987 and 2003. However, the current rate of employment for young adults with disabilities lagged significantly behind that of same-age peers without disabilities (41% vs. 63%) in 2003. Worst yet the unemployment rate reported by Wagner et al., in 2005 is significantly higher than the findings of the 2004 National Organization on Disability in which only 35% of the people with disabilities indicated that they were working full-or-part-time.

About 63 percent of students with mental retardation exited school by graduating with either diplomas or certificates of attendance. Compared to students with learning disabilities or communication disorders, more students with mental retardation graduated through the certificate method. The percentage of these students who dropped out (about 22 percent) is slightly below that for all other students receiving special education (U.S. Department of Education, 1993).

Follow up studies have indicated that the majority of special education graduates do not make successful transitions from school to life as adults in
their local communities. Many remain underemployed or unemployed despite participating in successful transition experiences. Professionals argue that this is due to a lack of decision making skills and the unnatural experience fostered by special education. This concern has spawned support for full participation of people with disabilities in natural settings in the community and for teaching them to make choices (Ysseldyke and Algozzine, 2009).

Mechling and Ortega-Hurndon (2007) evaluated the effectiveness of Computer-Based Video Instruction (CBVI) to teach three young adults with moderate intellectual disabilities to perform complex, multiple step job tasks in a generalized setting. A multiple probe design across three job tasks and replicated across three students was used to evaluate the effectiveness of CBVI to teach job skills. All instructional sessions occurred through simulation that combined the technologies of video and computer-based instruction. Generalization of skills was assessed at the actual job site. Results indicated that CBVI was effective in teaching generalized, multi-step job tasks which were maintained over time.

Cavkaytar (2012) examined the effectiveness of the Cafe´ Waiter Education Program by providing the least prompting to three adult subjects with intellectual disability in a real-life setting. A multiple probe research design across subjects was used. Cafe´ waiter skills included five main tasks incorporating 125 skill steps. Task analysis was developed by a professional cafe´ waiter, the cafe´ manager, a doctoral student in special education, and the principal investigator. The skill steps were tested with a study sample. Ordering and dishing up menu items, serving, and cleaning up were taught through training and maintenance sessions. The research setting was a special training area in the cafe´. Generalization and follow-up were studied in an actual cafe´ with paying customers. Generalization sessions were conducted at the end of the training sessions; generalization and follow up sessions were designed as probe sessions. For each probe session, data collection was
accomplished with a single opportunity method. Correct responses were reinforced during all sessions. Incorrect responses resulted in error correction during training sessions and were ignored during probe, generalization and maintenance sessions. Findings suggested that the Café Waiter Education Program was effective when carried out using the least prompting in real settings for adults with intellectual disability.

Individuals with intellectual disability are not employed because they are not trained to be ready for work. In a study by Baran and Cavkaytar (2007), employers stated that many individuals with intellectual disability who are working do not have employment skills. Employers also stated that these individuals graduated with limited cooperation skills, which are difficult to acquire in work settings. Employers want employees to have self-management skills and prefer individuals who are punctual and follow rules. Generally, individuals with intellectual disability work as intermediate staff members on production of goods and in service provision. The findings show that employers are positive about hiring individuals with intellectual disability, so long as these employees have appropriate vocational skills.

Inclusive work changes people, by increasing abilities, self-confidence, a sense of responsibility and independence. The dependent child of today can become and independent, productive adult of tomorrow, if given a chance to participate in work. Parents, who protect their children with learning disabilities from the world of work, be it at home or in the community, do them a disservice and insure their continued dependence. In developing countries, as elsewhere, the range of inclusive work opportunities for persons with mental handicap is limited only by our imagination, and courage to create choice (Thressiakutty and Rao, 2001)

Berry and Kymar (2012) conducted a study on human resource professionals' perception on disability related barriers to employment of Persons with intellectual disability. The result based on mean scores, the
perceived barriers are found to be Difficulty in work life balance (3.24), Need for work place modification (3.21), Inadequate education (3.03), Non-acceptance of employers (3.03), Attitudinal change of society (2.94), Lack of experience (2.79), Lack of support from family & friends (2.65), Associated disability (2.56), Difficulty in accessibility (2.26), and Attitude of coworkers (1.85).

2.7. FUNCTIONAL ACADEMIC SKILLS

Mini and Glory (2013) examined functional skills of pre-primary children with moderate mental retardation in residential schools and parental perception on the development of functional skills. The results indicate that 55% of the sample of children belongs to very poor in functional ability, 30% belongs to poor functional level, 10% were functional level, and 5% were non-functional. There was highly significant positive correlation between functional skill development and parental perception on functional skills development.

Aiswarya and Glory (2013) investigated a comparison of functional English language performance of students with mild mental retardation studying in special school system and integrated school system. The results of the study revealed that the English language performance scores of students with mild mental retardation studying in special school system is significantly better than that of integrated school system. Both categories lie in poor performance level.

Research studies have proved that if adequate training is given for a sufficient period of time persons with intellectual disability can learn difficult tasks (Gold, 1972) and can learn a wide variety of functional skills necessary for successful operation in home and community environments (Snell & Browder, 1986; Westling et al., 1990).
Shruti and Sunish (2013) conducted a comparative study on the achievement of independent living skills of adults with mental retardation studying in residential and day care settings. The data were analyzed domain wise such as personal care and appearance, sexuality, functional literacy and social communication. The result of the study showed no significant difference in the achievement of independent living skills among adults with MR studying in residential and day care settings. Result of the domain wise analysis also showed no significant difference in the achievement of independent living skills among adults with MR studying in residential and day care settings except in the domain functional literacy. Adults with MR in day care settings show better achievement in independent living skills than residential settings.

A survey was undertaken by Kaur and Sen (1974) to observe the characteristics of children with mental retardation and to see the effects of special schooling on the overall development of educable mentally retarded children in different spheres namely – academic, personal, social; from the case histories of 87 children it was possible to draw the following conclusions; 1) Mental retardation is closely related to socio-economic status of parents, 2) Delay in the acquisition of speech is observed in them, and 3) Speech defects of varying types were present. However most of the children can be trained and educated. Training and education given by the schooling helps them to attain functional independence and to live a life of usefulness.

Pulsifer and Wistrom (2012) suggested that teaching cooking to persons with intellectual disabilities is an opportunity to not only increase independence, but also put basic academic skills to use in a functional way. Determining what is needed, obtaining the ingredients and following directions to put it together are all important steps. There are some skills which are required in order to be independent throughout a person's life. For this reason, teaching cooking to persons with intellectual disabilities is
a functional skill needed to maintain a high quality of life. It not only allows them to be independent, it also gives them an opportunity to put other skills like shopping, basic math and reading to use in a functional way that will benefit them. For many students with disabilities, it is easier to learn these skills in the context of real life situations than it is by completing worksheets or dealing with imaginary activities.

Ewoldsen et al., (2006) investigated the perception and imagery condition of 15 young adults with intellectual disability and 17 college students. It is found that persons with intellectual disability have no particular deficit in image perception and perhaps, relatively good imagery capacities.

Carter et al., (2009) examined self-determination skills and opportunities of adolescents with severe intellectual and developmental disabilities. Researchers asked teachers and parents to assess the self-determination prospects of 135 youths with severe intellectual and developmental disabilities. Teachers typically reported that youths evidenced limited knowledge about self-determined behaviour, ability to perform these behaviours, and confidence regarding the efficacy of their self-determination efforts. Parents and teachers diverged in their evaluations of the self-determination capacities of youth but agreed that opportunities to engage in self-determined behaviour were available both at school and home. Although social skill and problem behaviour ratings both were significant predictors of teachers ratings of student’s self-determination capacity, opportunities at home, and problem behaviours were negatively correlated with ratings of students’ self-determination capacities and opportunities.

Carter et al., (2008) examined the peer interactions and academic engagement of 23 middle and high school students with developmental disabilities within inclusive academic and elective classrooms. The extent to which students with and without disabilities interacted socially was highly variable and influenced by instructional format, the proximity of general and
special educators, and curricular area. Peer interaction occurred more often within small group instructional formats, when students were not receiving direct support from a para professional or special educator, and in elective courses. Academic engagement also varied with higher levels evidenced during one-to-one or small group instruction and when in proximity of general or special educators.

Barisnikov et al., (2008) investigated face processing and facial expression recognition of seventeen adults with Down syndrome, and results were compared with those of a child control group matched for receptive vocabulary. On the facial expression tasks, participants with Down syndrome exhibited particular difficulties with the neutral and surprised expressions. Analysis of their error pattern suggests they had a tendency to judge faces more positively than did the controls. Finally, there were significant relationships among emotional processing, receptive vocabulary, and inhibition measures.

Esbensen et al., (2008) observed over 9 year period changes in health, functional abilities, and behaviour problems among 150 adults with Down syndrome and 240 adults with mental retardation due to other causes. Adults with Down syndrome were advantaged in their functional abilities and lack of behaviour problems, comparable in health, and exhibited comparable rates of change on these measures as adults with mental retardation due to other causes. Placement out of the parental home and parental death were predictors of change in health, functional abilities and behaviour problems.

Millar (2009) examined IEP transition related content between young adults with developmental disabilities who had or did not have legal guardians. The study resulted no significant differences in the number of objectives related to employment, transportation and self-care were observed. Differences were observed regarding teaching self-determination related skills; students without guardians had more objectives than those with.
Preena and Sukumaran (2006) examined the level of functioning of children with mental retardation in functional reading, functional writing and analyzes the functional ability with respect to gender, level of retardation and type of school. The sample of the study consists of 100 children with mental retardation studying in different special school of Kanyakumari district. It was found that a) significantly higher functional writing ability than reading ability b) significant positive relationship between reading and writing c) significantly higher reading ability of daycare school children than that of residential schools d) significant difference exists in functional reading and writing ability among children of various levels of retardation and e) gender was not found to be a significant factor that decides the functional ability.

Preena (2009) examined the functional academic skills and parental involvement of children with mental retardation. She found that majority of children with mental retardation have not acquired independence in functional academics. Only 30% of the sample studied have independence in functional academic skills. Parental involvement in general was found to be good (70.69%). Age, number of years of schooling, level of retardation, behaviour problem and teacher-student ratio were found to be the significant factors that influence the parental expectation. Of all the three domains of academic skills studied namely receptive-expressive language, reading-writing and number-time, the highest mean value was obtained for receptive-expressive language (79.22%) and the lowest mean value was obtained for number-time (46.89%), percentage of mean value for reading-writing was 55.69%.

Preena and Sukumaran (2008) reported the level of functioning of children with mental retardation in number and time skills. They also analyzed the functional ability with respect to gender, level of retardation and type of school. Major findings were a) significant positive relationship exists between number and time skills, b) day care school children have significantly higher number and time skills than that of children in residential schools, c)
significant difference exists in number and time skills among children of various levels of retardation, d) no significant difference exists between level of functioning in number and time skills, and e) gender was not emerged as an influencing factor in the functional ability in number and time skills.

Jimenez et al., (2008) determined the effect of systematic instruction with a concrete representation on the acquisition of an algebra skill for students with moderate developmental disabilities. Three high school students with moderate developmental disabilities participated in this study. This study was the first to teach an algebra skill to students with moderate developmental disabilities. Students were successful at learning how to solve an algebraic equation through the use of systematic instruction with a concrete representation, including mastery with generalization across materials and settings.

Preena et al., (2008) conducted a study on the functional level of children with mental retardation in expressive and receptive language skills. The sample of the study consists of 100 mentally retarded children studying in various special schools of Kottayam district of Kerala state. Major findings were: significantly higher expressive language skills than receptive language skills, significant positive relationship between functional receptive and expressive language skills, males perform significantly better than females in functional language skills, type of school was not a significant factor that decides the functional language ability, and mildly retarded individuals perform significantly better than the moderately retarded in functional language skills.

Chandra (2013) conducted a study on the self-assessment of self-determination of the persons with mild intellectual disability. The result shows that not only can a successful and dignified life be led by the adolescents with mild intellectual disability, but also assessment done by them is reliable, if the focus is made in developing self-determination from the very early ages.
McGillivray (1999) was designed a study to explore the level of knowledge and risk of contracting HIV/AIDS amongst a sample of 60 young adults with mild/moderate intellectual disability. In comparison to a sample of undergraduate students, they showed greater deficits in their general knowledge of the disease and in methods to minimize risk of infection. They also had less adaptive attitudes regarding AIDS in general and specifically with regard to condom use and they had lower confidence in their capacity to accomplish safe-sex practices. Furthermore, when presented with hypothetical risk situations they were more likely to present unsafe sexual solutions to the interpersonal dilemmas. These indications of potential risk were compounded by the finding that the majority were either sexually active or had strong intentions to become so, and that poor performance on the range of measures was associated with greater behavioural risk as assessed by actual or anticipated sexual activities. The implications of these results are discussed in relation to the need for urgent implementation and ongoing evaluation of multifaceted educational programmes.

Many students, parents, and professionals are confused about what specifically should be included in the curriculum. Mild students with mental retardation are labeled only during formative school placement (Lilly, 1979), yet have functional problems that originate in school and carry over into adult life (Wang et al., 1990). Clearly, these students require special services, such as community-based training, vocational education, and career planning-services that are addressed in functional and ecological curricula, which are derived from the identification of skills necessary for community functioning. These students also need the opportunity to earn and occupationally oriented diploma through a programme that teaches functional academic skills, as well as paid work skills-occupational and career orientations in middle and secondary school are absolutely imperative for this group of students.
Teaching self-determination skills to students with disabilities helps them become, more efficient in acquiring knowledge and solving problems (Bambara et al., 2006). Students grow better able to achieve goals that will facilitate their transition out of school and become aware of the specific challenges they will face in the adult years. Ultimately, the student leaves school with a more highly developed sense if personal worth and social responsibility and with better problem-solving skills.

For students with moderate to severe disabilities, the purpose of academic learning may be more functional and compensatory to teach skills that have immediate and frequent use in the student’s environment (Browder et al., 2006). Instruction concentrates on skills needed in the student’s daily living routine. For example, safety skills may include reading street signs, railway crossing, entrance, exit signs, etc. Information skills may include reading job application forms, classified ads, maps, telephone directories, or catalogues.

Research on the academic achievement of children with mild to moderate intellectual disabilities has suggested that they will experience significant delays in the areas of literacy and mathematics. Reading comprehension is usually considered the weakest area of learning. In general, students with mild intellectual disabilities are better at decoding words than comprehending their meaning (Drew & Hardman, 2007) and read below their own mental-age level (Katims, 2000).

Children with intellectual disabilities also perform poorly on mathematical computations, although their performance may be closer to what is typical for their mental age. These children may be able to learn basic computations but may be unable to apply concept appropriately in a problem-solving situation (Beirne-Smith et al., 2006).

A growing body of research has indicated that children with moderate or severe intellectual disabilities can be taught academics as a means to gain
information, participate in social setting, increase their orientation and mobility, and make choices (Browder et al., 2006).

Hua et al., (2014) investigated the effectiveness of teaching a three-step paraphrasing strategy on expository reading comprehension of young adults with intellectual disability. Ten learners from a postsecondary education program for individuals with disability participated in the study. They were randomly assigned to the control and experimental group before the study. An instruction delivered a series of 12 lessons to students in the experimental group using the cognitive strategy instructional model. In the context of a pre and post-test with control group design, students in the experimental group outperformed the control group on total number of main ideas and details recalled. Results of the study indicate that young adults with intellectual disability can benefit from a cognitive reading comprehension strategy using explicit instruction procedures.

Parmar et al., (1996) conducted a study on performance on mathematics word problems having varying structures was compared for grade 3-8 students with and without mild disabilities. Students with disabilities performed at significantly lower levels than did those without disabilities in four types of word problems, even when the problems involved only single digit computation. Significant effects were also evident for grade and operation. The findings were high light activities, including word problems of varying structures. Further, test willingness to accept them as pupils in their normal educational settings.

Narayan and Myreddi (1996) while dealing with the education of children with mental retardation gives the emphasis on functional assessment for programming for developing independent living skills in persons with mental retardation.

Singh (2002) reported that educating individuals with Profound Mental Retardation (PMR) is a problematic issue. The author explained the basic
characteristics, educability of individuals who are PMR, what to teach, the existing approaches, characteristics of educational planning and competencies of the educators.

Willoughby (2014) reported that the present day rights of people who have intellectual disabilities have developed significantly since 19th century Australia. This group of people are now believed to have the capabilities to develop their skills throughout their entire lives, and are supported by carers and their family to so. Australian Law upholds individual rights to continue to develop their skills and the Department of Human Service (DHS) Standards 2011 were created to ensure that service providers support people in practicing this right. The DHS Standards 2011 state that service providers must promote strength based approach (building in individual strengths) and active engagement (learning through engaging in activities) throughout their services.

Ayres et al., (2011) determined the most effective curricula for students with severe disabilities requires increased attention as legislation and curricular changes are being made in the field of special education. This study a) reviews the legislation mandates from the 2004 Individuals with Disabilities Education Improvement Act (IDEIA) and the 2001 No Child Left Behind Act (NCLB), b) discusses evidence-based practices for a standards-based curriculum and functional curriculum, and c) examines longitudinal outcomes for students with severe disabilities. The research suggests that students working on functional skills provided through a meaningful curriculum leads to a more independent life.

Alwell and Cobb (2009) examined the relationship between functional or life skills curricula (the intervention) and transition-related outcomes for secondary aged youth with disabilities. A total of 50 studies intervening with 482 youths with disability labels of moderate to severe mental retardation were reviewed. The findings of this review provide tentative support for the
efficacy of the use of functional or life skills curricular interventions across educational environments, disability types, ages, and gender in promoting positive transition-related outcomes.

Mary (2010) conducted a study on Literacy-Rich Approach (LRA) in the language development of children with intellectual disability. The results revealed that LRA was highly effective for overall literacy development and conventional approach was adequate for acquiring majority of skills while LRA was needed for generalizing and maintaining learned skills.

2.8. BEHAVIOUR PROBLEMS

Mehta and Ochaney (1984) studied the application of operant condition model on mothers. It has been tried out on four children with mental retardation, who had problems of hyperactivity, poor concentration, and difficulties in self-care. Contingency management procedures like modeling, instructions, behavioural rehearsal and reinforcement were applied with the help of mothers. The results indicated that though it was a time consuming method, it was useful in modifying the problem behaviour in all four children.

Dekker et al., (2002) assessed and compared the prevalence of a wide range of emotional and behavioral problems in children with and without Intellectual Disability. Controlling for sex, age, and socioeconomic status, they found that both educable and trainable children had significantly higher mean scores on all Child Behavior Checklist and Teacher's Report Form scales than children without ID, except for trainable children on the scales Anxious/Depressed and Somatic Complaints. Almost 50% of children with ID had a total problem score in the deviant range compared to about 18% in children without ID. Compared to children without ID, the most prominent problem behaviors of educable children were social problems, attention problems, and aggressive behavior, and trainable children had an increased risk for social problems, attention problems, withdrawn and thought problems. The study conclude that elevated scale scores reflected differences between
children with and without ID over a broad range of items, and not solely on items more likely to be related to developmental delay. Therefore, problem areas covered by the items in these scales deserve special attention in the mental health care of children with ID.

Bouras and Drummond (1992) reported that psychiatric and behavioural disorders were found to be relatively common in a sample of 318 individuals with mental retardation living in the community. Many of those referred for psychiatric assessment had other non psychiatric problems. The presence of these other needs has been recognized, and has led to the emergence of a distinct group of professionals, therapists and support staff with whom psychiatrists need to raise to devise an adequate and effective care plan. This study also highlights the need for the development of a methodology for assessing psychiatric disorders in people with mental retardation.

Matson et al., (1991) reported that the Diagnostic Assessment for the Severely Handicapped scale was used to assess 506 profoundly and severely mentally retarded persons (247 females and 259 males). The scale, covering 13 major psychiatric disorders, consists of 83 items derived from DSM-III-R as well as previously published studies of this population. Data were collected on symptom frequency, duration and severity in individual interviews with direct-care staff. Elimination and pervasive developmental disorders were most frequent and self-injurious behaviour disorders were most severe. Most symptoms had been evident for at least a year. Inter-rater reliability was generally good.

Orsmond et al., (2003) examined the occurrence and stability of behavior problems over a 6-year period among 193 adults with mental retardation who lived with their mothers. At the beginning of the study period, almost 30% of the sample had clinically significant behavior problems and about 25% had no behavior problems. During the study period, group-level
stability of behavior problems and individual-level change were observed. We tested the bidirectional relations between behavior problems and maternal well-being and found evidence of both directions of influence. Initial levels and changes over time in behavior problems predicted changes in maternal well-being, and initial levels and changes over time in maternal well-being predicted changes in behavior problems in the son or daughter.

Rojahn et al., (2004) assessed adults with predominantly severe and profound mental retardation (N = 180) who lived in a developmental center with the Behavior Problems Inventory and the Diagnostic Assessment for the Severely Handicapped-II. Individuals with self-injurious, stereotyped, or aggressive/destructive behavior had generally higher psychopathology scores than individuals without, and the presence of behavior problems increased the likelihood of almost all psychiatric conditions up to three-fold. Factor analysis revealed that behavior problems tended to be associated with psychiatric conditions conventionally linked with behavior problems. A Self-Injury and Aggression/Destruction factor was related to impulse control and conduct problems, and a Stereotyped Behavior factor was linked to pervasive developmental disabilities and somewhat less so to schizophrenia. Stereotyped Behavior factor was independent of the Self-Injury/Aggression/Destruction factor.

Bird et al., (1998) reported that ten individuals with mental retardation and psychiatric disorders who failed in their community placements due to aggression, property destruction and suicidal ideation were provided an environment emphasizing a network of mental health and developmental disabilities services. The focus of programming was the application of psychiatric rehabilitation principles and environmental behavior support strategies. Components of the treatment model included goal-setting, comprehensive case management, social skills training, positive reinforcement, crisis intervention, competency-based skills teaching, medication monitoring,
data-based outcome measurement, and community-living arrangements. Results indicated that in contrast to their pre intervention status, all individuals demonstrated significant reductions in targeted behaviors, maintained extended placement within the community without emergency hospitalizations, developed effective and adaptive social skills, secured job placement, and reported satisfaction with their quality of life.

Suma and Sukumaran (2008) examined the competency of special teachers in managing problem behaviours and the identification of the strategies adopted by special teachers for decreasing behaviour problems of children with mental retardation. Also it tried to analyze the data with respect to teacher related variables such as educational qualification, teaching experience and type of school. Special teachers, in general, were found to have below average competency in using correct strategies for reducing behaviour problems. Teacher related variables such as educational qualifications, teaching experience and age of teachers were not emerged as significant variables that influence the strategies adopted by special teachers in managing behaviour problems. However type of school was found to be a significant predictor of strategies adopted by special teachers.

Galloway and Goodwin (1987) suggest that many pupils with behaviour problems have poor social skills. When they engage in socially disapproved behaviour they have insufficient social skills to negotiate themselves out of the trouble this creates, and so this group can easily become labeled as ‘disruptive’ and ‘beyond control’.

Petty et al., (2009) examined repetitive and communicative behaviours in children with severe intellectual disabilities. Experimental and descriptive functional analysis and sequential analysis used to examine the functional and temporal relationship among the self-injurious, potentially injurious, repetitive, challenging, and pragmatic communicative behaviours of six children with intellectual disability. Sixteen functionally equivalent response
classes were identified across participants using both experimental and naturalistic observation data. Repetitive, potentially injurious, and self-injurious behaviours were significantly temporally associated, and pragmatic communicative behaviours were strongly temporally associated with challenging behaviours.

Bruininks et al., (1994) compared prevalence rates of behavior problems among 5,338 individuals living in different residential settings: with family, in a foster or group home, semi-independent living, and institutional living. Individuals living at home had the lowest rates of behavior problems. Over a quarter of individuals living with their family (28.7%) had no challenging behaviours, 12.8% showed behaviour that was hurtful to self, and 14.1% had behaviours that were hurtful to others. Behaviour that was destructive to property was the least prevalent, occurring in 10.1% of those who lived with family. Although the prevalence of behaviour problems in the Bruininks et al., (1994) study was higher than in the Borthwick-Duffy (1994) studies (possibly due to differences in the measures of behaviour problems), the conclusions were the same, adults who live with family had the lowest rates of problem behaviours of the groups studied. Nevertheless, when behaviour problems are manifested, the capacity of families to continue to provide care may be challenged and ultimately compromised (Heller et al., 1997).

Self-Injurious Behaviour (SIB) is a serious condition, with implications for the persons, their family and financial costs to the state providing care. The previously reported prevalence of SIB has ranged from 1.7% to 41%, or 1.7% to 23.7% in community studies. There has been little study of remission rate, and incidence has not previously been reported. SIB has been reported to be individually associated with lower ability, autism and communication impairments, but given the inter-relationships between these three factors, it is not known whether they are independently associated with
SIB. Cooper et al., (2009) investigated the point prevalence, incidence and remission rates of SIB among the adult population with intellectual disabilities, and explore which factors are independently associated with SIB. Cohort study design was used in a general community setting. The participants were all adults (16 years and over) with ID in a defined geographical area. Individual assessments were conducted with all participants. The result shows that the point prevalence of SIB was 4.9%, the two-year incidence was 0.6%, and two-year remission rate was 38.2%. Independently related to SIB were: lower ability level, not living with a family career, having attention deficit hyperactivity disorder, visual impairment, and not having Down syndrome. Other factors, including communication impairment, autism, and level of deprivation of the area resided within, was not related.

This study concluded that SIB is not as enduring and persistent as previously thought; a significant proportion gains remission in this time period. This should provide hope for families, paid careers and professionals, and reduce therapeutic nihilism. The extent to which SIB may be a relapsing-remitting (episodic) condition requires further investigation, so does further hypothesis-based investigation of factors that might be predictive of incidence of, and remission from, SIB.

Saija (2007) examines the level of problem behaviour of students with mental retardation and analyzed the problem behaviour with respect to their age, gender, and level of retardation. The results indicate that 44% have very low problem behaviour, 30% have low problem behaviour, 26% have moderate problem behaviour and not a single individual was found to have high problem behaviour. Age, gender and level of retardation were found to be significantly influencing the problem behaviour of students.
2.9. SEXUAL PROBLEMS

Tharinger et al., (1990) reported that there is growing recognition that children, adolescents, and adults with mental retardation are particularly vulnerable to sexual abuse and exploitation and are in need of intervention services. These people are especially vulnerable due to their often life-long dependence on caregivers, relatively powerless position in society, emotional and social insecurities, and lack of education regarding sexuality and sexual abuse. In addition the mental health functioning and emotional development of individuals who are mentally retarded are not well understood, and many professionals remain uneducated about their mental health needs. To work effectively with this population, mental health professionals and educators must be alert to what is known about the sexual abuse and exploitation of persons with mental retardation. Furthermore, they need to become educated about the rights of these persons to special legal protection from abuse and neglect and to appropriate and effective mental health interventions. The challenge for mental health professionals and educators is to protect persons with mental retardation from sexual abuse and exploitation, to provide appropriate psychotherapeutic interventions when abuse occurs, to respect their right to developmentally appropriate knowledge about sexuality and sexual abuse, and to allow for the fulfillment of their sexuality.

Davis (2009) reported that there is not enough research to determine the answer to this question; are people with intellectual disabilities more likely to be charged with committing sexual offenses? These individuals may be more likely to be charged with committing a crime compared to those without a disability whenever illegal sexual behavior is reported. This is due to their inability to hide their behavior as well as others, or they may not even realize their behavior is unhealthy, hurtful or illegal due to receiving little or no sex education. On the other hand, sexual offenses by people with intellectual disabilities sometimes go unreported since law enforcement and others are
unsure as to how to handle an individual with this type of disability who is alleged to have committed a sexual offense.

Some studies found that these individuals are more likely to commit sexual offenses, while others found they were not. One comprehensive review of sex offenders found that approximately 10% to 15% of all sexual offenses are committed by people with intellectual disabilities, which is only slightly higher than the general population (around 9%) (Murphy et al., 1983). Another study found that almost 50% of incarcerated offenders with intellectual disabilities and 34% of those living in the community had been convicted of sex offenses (Gross, 1985). Research from Day (1997) found sex offenses to be the second most common crime among people with intellectual disabilities and that sex offenses are crimes for which most offenders with intellectual disabilities are incarcerated.

Another study that surveyed 243 community agencies found the most common sexual offenses were inappropriate sexual behavior in public (62.2%), sexual behaviors and stimulation that inappropriately involved others (42.6%), sexual activity involving minors (42.6%) and assaultive/nonconsensual sexual activity not involving minors (34.5%) (Ward et al., 2001).

Attitudes toward the sexuality of adults with intellectual disability were assessed in parents and carers of adults with intellectual disability and in a community sample. An instrument that contained items relating to eight aspects of sexuality (sexual feelings, sex education, masturbation, personal relationships, sexual intercourse, sterilization, marriage, and parenthood) was developed and found to have good internal consistency and test-retest reliability. Age was associated with attitudes, with those aged 60 and above holding more conservative attitudes. Parents and staff differed in their attitudes, with parents holding more conservative attitudes. This difference was the product of age differences between the groups; nevertheless it may
produce some confusion for adults with intellectual disability unless it is addressed appropriately. Both parent and staff groups were less positive about parenthood than about other aspects of sexuality, however the community group did not differ in their views when attitudes towards parenthood were compared with the remaining items of the scale (Cuskelly and Bryde, 2004).

Cuskelly and Bryde (2004) found that staff had significantly more liberal attitudes than parents with respect to the behaviour of adults with an intellectual disability, although they suggested the differences were likely to be generational rather than role based.

Sullivan and Knutson (2000) investigated the incidence of child abuse among an entire school-based population that included all 50,278 children during the 1994/95 school year in Omaha, Nebraska. They collected child abuse registry records, foster care records, law enforcement records, and school records to obtain evidence of child abuse and information about disability status. The results showed that children with intellectual disabilities were about 4.0 times more likely to be the victims of child abuse than their peers without disabilities. In particular, these children were 4.0 times as likely to be sexually abused, 3.8 times as likely to be physically abused, 3.8 times as likely to be emotionally abused, and 3.7 times as likely to be neglected as children without disabilities.

Historically, individuals with mental retardation have not enjoyed the sexual freedom afforded to individuals without disabilities. Although progress has been made, there is much room for improvement. Lumley and Scotti (2010) suggest a comprehensive approach to supporting the sexuality of adults with mental retardation. A discussion of traditional sex education programs is provided, followed by recommendations for building on this approach. Specifically, individualized assessment and programs, to be conducted within the framework of a person-centered planning approach, is proposed. This
approach enlists significant persons in the target individual's life, including family and formal care providers, who can serve as supports.

Over a 5-year period, of the 461 cases of sexual abuse of adults with mental retardation, 37% were confirmed by the Abuse Investigation Division of the Connecticut Office of Protection and Advocacy for Persons with Disabilities. As expected, most of the victims were women (72%); their average age at the time of the incident was 30 years. Victims, for the most part, had no problems communicating verbally and had few, if any, secondary disabilities. As is the case in the general population, the majority of the perpetrators were men (88%) and included other adults with mental retardation, paid staff, family members, and others. Most sexual abuse occurred in the victim's residence, and in 92% of the cases the victim knew his or her abuser (Furey, 1994).

Programs to teach sexual abuse prevention skills to persons with mental retardation have rarely been evaluated empirically, and typical evaluations are limited to assessment of the participants' knowledge rather than their performance of specific skills. In the present study, 6 adult women with mental retardation were trained in sexual abuse prevention, and performance was assessed using four separate measures: pretests and posttests of knowledge, verbal report, role play, and naturalistic probes. All women learned the skills but failed to exhibit them to criterion during the probes (Lumley et al., 1998).

Valenti-Hein (2002) reported that adults with mental retardation were assessed for their ability to use visual tools for identifying body parts. Participants were shown three representations: anatomical dolls, anatomical drawings, and live models, each of which had a sticker placed on a body part. They were asked to name that body part and place a sticker in the same place on their own body. Results indicated that verbal labeling was easier for participants with mild mental retardation compared to moderate mental
retardation. Level of mental retardation affected the participants' ability to correctly place the stickers. Form of representation was also important. Live models were easier to use compared to dolls and drawings.

According to McCarthy (2003), professionals have in the past been slow to listen to what people with intellectual disabilities have to say about the issue of sexual abuse. However, she believes that this is changing and that the development of both group and individually based sex education programmes, as well as the development of more general self-advocacy networks, has enabled many people with learning difficulties to speak out about the abuse they have experienced.

Hickson et al., (2008) defined sexual abuse as touching and fondling of the sexual or other body parts of a participant for the purpose of gratifying sexual desire, whether directly or through clothing. Abuse, as defined, also included causing a participant to touch anyone else for the purpose of arousing or gratifying that person’s sexual desire. In this study, the term sexual abuse encompassed any sexual activity involving participants who are considered to be legally ‘non consenting’ and any sexual activity that is perceived by a ‘consenting’ participant as harassment, coercion, or exploitation.

Science News (2011) reported that previous studies concluded: women with disabilities are more likely to be sexually assaulted than women without disabilities. A new study published online October 11 in the American Journal of Preventive Medicine is the first population-based investigation to examine sexual violence victimization against men with disabilities. Researchers report that men with disabilities are more than four times more likely to be victimized by sexual assaults compared to men without disabilities.

Unless adolescents with mental retardation are prepared for the great physiological changes brought about by puberty, they may come as traumatic experiences. The adolescent young woman with retardation who has not been
prepared for menstruation may find her initial experience frightening and may be too embarrassed to seek help. Who is responsible for providing sex education belongs in the school; others consider sex education primarily, if not exclusively, the responsibility of the parents (Kempton, 1983).

2.10. EMOTIONAL PROBLEMS

Researchers examined the attitudinal and psychosocial outcomes of fitness and health education program for adults with Down syndrome. Examined 53 adults with Down syndrome ages 30 years and older (29 females, 24 males) who were randomized into a training ($n = 32$) or control group ($n = 21$). The training group participated in a 12-week, 3 days per week, exercise and health education program. Outcome measures included attitudes towards exercise (cognitive–emotional barriers, outcomes expectations, and performance self-efficacy) and psychosocial well-being (community integration, depression, and life satisfaction). Compared to controls, the training group showed significant changes in attitudes towards exercise, including increased exercise self-efficacy, more positive expected outcomes, fewer cognitive–emotional barriers, improved life satisfaction, and marginally lower depression (Heller et al., 2004).

Lindsay et al., (1994) examined sixty-seven subjects with mild or moderate intellectual disability on a variety of measures of emotion. All of the measures were self-report measures and all of the data is based on reports by the subjects' themselves. The battery included the Zung Self-Rating Anxiety Scale, the Zung Depression Inventory, the General Health Questionnaire and the Eysenck-Widj-eers Personality Test. The results revealed that an impressive amount of convergent validity in the subjects' emotional systems.

Matheson and Jahoda (2005) examined the difference in emotion recognition between aggressive and non-aggressive individuals with intellectual disability and found happiness, sadness, and anger were the easiest emotions for all participants to identify regardless of whether they frequently
engaged in aggressive behaviour. Furthermore, the aggressive and nonaggressive groups demonstrated comparable abilities for labeling emotions. However, the aggressive group had more difficulty recognizing the emotion when contextually rich emotional photos were presented.

Benson and Ivins (1992) self-report measures of anger, depression and self-concept that were designed for non-retarded children were adapted for adults with mental retardation. The measures were administered to 130 adults with mental retardation who lived in the community. Informants rated the subjects on shortened forms of the three emotional indices. Informant self-concept ratings were negatively correlated with ratings of anger and depression. On the self-report measures, subjects who reported low self-concept also reported high levels of depression. Mildly mentally retarded subjects were more likely to report anger than severe/moderately retarded subjects. Informant and self-report measures were significantly correlated for self-concept and depression, but not for anger. The results provided preliminary normative data on indices of emotional adjustment for community-based adults with mental retardation.

Day (1993) reported that the mental health needs of mentally retarded people cannot be met satisfactorily with generic mental health services. Specialized services are required. A number of different service models have evolved which require evaluation. They include sub regional units, community-based services with a small admission facility, integrated services and specialist teams. Staff working in specialist mental health services must be appropriately trained.

The 2001 Behavioral Risk Factor Surveillance System and North Carolina National Core Indicators Survey found that “adults with developmental disabilities are seven times more likely to report inadequate emotional support, compared with adults without disabilities” (Havercamp et al., 2004). New York State conducted a similar survey attempting to collect
information on emotional support for adults with developmental disabilities, and found that of the 710 individuals in their sample, 43.9% said they did not have friends who asked to do things with them, and only 30.9% have gone on a date in the last six months (NYS Core Indicators Report, 2009). These statistics indicate that adults with developmental disabilities are at risk of isolation and poor emotional support.

Lack of community integration and emotional support could also lead to adults with developmental disabilities having behavior problems. The Core Indicators Report found that often it is the behavioral problem, not mental retardation that prevents individuals from successfully living and working in the community. This demonstrates that behavioral reactions to poor emotional support are limiting access of community resources for adults with developmental disabilities. This limited access aids to create health disparities within this population.

Alcaraz et al., (2010) examined the ability to recognize facial expressions of emotion in adults with Down's syndrome and analyze whether a specific deficit exists in recognizing emotional facial expressions in this etiology. Specifically, face processing and recognition of emotional facial expressions was investigated in 20 adults with Down's syndrome and moderate intellectual disability, and the results were compared with those of adults control group matched for age and sex. The results indicate that adults with Down's syndrome show a response pattern similar to that shown by adults in the general population despite getting poorer performance in all facial processing tasks applied.

2.11. SOCIAL PROBLEMS

Lee et al., (2003) investigated the quality of social relationship among children with mild intellectual disabilities and peers who were not disabled and found that the children without disabilities did perceive their classmates with intellectual disabilities as friends. However, they had concerns that
limitations in communication and some behaviour problems made it difficult to maintain a friendship with a child who had an intellectual disability.

Hartley and MacLean (2009) determined frequency and severity of various stressful social interactions, identified the social partners in these interactions, and examined the specific interpersonal skill difficulties of 114 adults with mild intellectual disability. Participants’ characteristic risk factors for stressful social interactions were also identified. Minor and unintentional negative actions of others had high frequency but low severity of stress. Serious and intentional negative actions of others had a low frequency but high severity of stress. Stressful social interactions with other people who have intellectual disability occurred frequently and had a high severity. Difficulty controlling aggression predicted stressful social interactions.

Hughes et al., (1995) note that social relationships and interaction are a critical aspect within most conceptualizations of quality of life and, indeed, found that this dimension has the largest number of empirical measures of all the dimensions they analyzed. Measures typically focus on the number of friends (with and without disabilities), having a best friend, frequency of interactions, and types of social activities in which people participate. Given the prominence of friendships and social activities as an indicator of quality of life, it is surprising, if not shocking, that so little research attention has focused on the social relationships of adults with MR/DD who live with their families. On the basis of the limited available literature, there is ample reason to be concerned about the social worlds of adults with MR/DD who live with family.

Gumpel (1994) discusses that the imperative for a reformulation of social skills training theory for adults with mental retardation. The practices in social skills training for persons with mental retardation are summarized along with potential reasons for their concomitant lack of maintenance and generalization of treatment gains. In order to better understand the process of
social skills acquisition, the concept of social competence must be redefined. A cognitive-behavioral definition and model of social competence and social skills is described which attempts to unify traditional social learning concepts based on the developments in research and practice with persons with cognitive deficits, along with a focus on its utility in the training of social skills among persons with mental retardation.

Eckert (2000) reported that a multiple baseline across subjects design was employed to determine the effectiveness of a social skills training method on adults with moderate developmental disabilities. The skill of accepting criticism was taught individually to females with moderate disabilities, 27 to 45 years of age, who were selected by a local social service agency. Participants selected were enrolled in a vocational or day habilitation program and did not evidence severe communication limitations due to the nature of the intervention. Evaluations, which were based on a ten-item checklist with a three-point scale per item, were conducted during role play situations. Results indicate that the training program was effective for all subjects.

Regardless of ability level or chronological age, communication and social skills remain the primary challenges in the education of persons with mental retardation. The pragmatic function of language is potentially a performance area of particular importance in that it integrates interpersonal and language capacities into the social aspects of communication. Bufkin and Altman (1995) investigate nonverbal pragmatics in students with and without mental retardation at three developmental levels. The data revealed an unexpected degree of commonality in the use of pragmatics between the two student populations with differences related sometimes to the frequency and other times to the inappropriateness of nonverbal communicative functions.

Huang and Cuvo (1997) discuss the rationale for social skills training for workers with mental retardation, definitions and behavioral standards of these skills, and differences in the interaction patterns between workers with
and without mental retardation. Various intervention strategies were reviewed critically, and their strengths and limitations were examined. Based on these analyses, the following recommendations are made. First, trainees’ environments of ultimate functioning should be considered and contextual variables assessed and used. Second, social validation should be conducted to identify the social behavior that needs to be trained. Third, some procedures that have been found effective in other areas might be used for social skills training for persons with mental retardation in job-related settings. Fourth, active programming should be included in the intervention package for trainees to generalize and maintain the acquired social skills.

Tekinarslan et al., (2012) examined teacher’s and mother’s assessment of social skills of students with mental retardation. According to the results of analysis, a high correlation was found between the total social skill scores of mothers and teachers assessment. A high correlation was found between externalizing behaviour subscale score and hyperactivity subscale score and the assertiveness subscale score of teachers and parents forms. A high correlation was observed between the total scores of problem behaviour subscales of teachers and parents forms. There is a moderate relationship between cooperative skills, self-control skills and internalizing problem behaviours. In addition the social skills of the girls are more than those of the boys, and their problem behaviours are lower than those of the males.

Emerson and Hatton (2008) investigated the association between indicators of subjective well-being and the personal characteristics, socioeconomic position, and social relationships of a sample of 1273 English adults with intellectual disability. Mean overall happiness with life was 71% of the scale maximum, a figure only marginally lower than typically reported among the population. Variation in subjective well-being was strongly and consistently related to indicators of socioeconomic position and to a lesser extent, social relationships. For woman, being single was associated with
greater well-being on all indicators. For men there was no association between marital status and well-being. Relationships with friends who also had intellectual disabilities appeared to be protective against feeling helpless.

Indu and Sukumaran (2008) examined the level of functional social skills of mentally retarded children with and without Down’s syndrome. The study was conducted on a sample of 60 mentally retarded children without Down’s syndrome and 44 mentally retarded children with Down’s syndrome studying in various special schools of Kottayam district of Kerala state. The results revealed that the level of social skills of mentally retarded children without Down’s syndrome is significantly higher than that of the children with Down’s syndrome. Significant positive correlation was reported between social skill scores and the age of without Down’s syndrome group.

Umadevi and Sukumaran (2012) conducted a study on functional social skills of adults with intellectual disability. The study sample consisted of 100 adults with intellectual disability. The results indicated that only 48% of the adults with intellectual disability in the study sample possessed functional social skills. They suggested that the parents and professionals, particularly special educators, should review the curriculum, method of teaching and the classroom practices.

Social support has been identified as a major protective factor in preventing mental health problems and also as a major contributor to quality of life. People with Intellectual Disabilities (ID) have been identified as having limited social support structures. Interventions have been focused on promoting their social presence and integration. However, previous studies have shown that this does not always lead to the formation of social relationships. Lippold, and Burns (2009) conducted a study on Social support and intellectual disabilities: a comparison between social networks of adults with intellectual disability and those with Physical Disability (PD). Two groups of participants were recruited; 30 people with mild ID and 17 people
with PD. Social and functional support networks were assessed, in addition to life experiences. Between and within group differences were then explored statistically. The result showed that adults with ID had more restricted social networks than PD, despite being involved in more activities. Social support for adults with ID was mainly provided by family and caregivers and few relationships with non-disabled people were identified. In contrast adults with PD had larger social networks than had been reported in the mainstream literature and had a balance of relationships with disabled and non-disabled people. The results suggested that there are additional processes attached to having an ID, which lead to continued impoverished lifestyles. The findings also endorse other work that suggests being physically integrated and engaged in a wide range of activities does not guarantee good social and emotional support.

Adults with intellectual disability are vulnerable to stressful social interactions. Hartley et al., (2009) determined frequency and severity of various stressful social interactions, identified the social partners in these interactions, and examined the specific interpersonal skill difficulties of 114 adults with mild intellectual disability. Participants’ characteristic risk factors for stressful social interactions were also identified. Minor and unintentional negative actions of others had high frequency but low severity of stress. Serious and intentional negative actions of others had a low frequency but high severity of stress. Stressful social interactions with other people who have intellectual disability occurred frequently and had a high severity. Difficulty controlling aggression predicted stressful social interactions. Findings are beneficial to developers of interventions to decrease stressful social interactions.

Ashworth et al., (2009) reported on the social life of adults with Intellectual Disability who engage in pica behaviour (that is, ingestion of non-food items). Secondary analyses were conducted on the population of adults
residing in Ontario's three remaining specialized institutions for persons with ID ($N = 1008$); 220 individuals (21.8%) had pica. All persons were assessed using the inter RAI Intellectual Disability assessment, a comprehensive and standardized instrument that supports person-centered service planning. A series of logistic regression models were used to evaluate the relationship between pica and various indicators of social relationships and activities, while controlling for a set of covariates. Pica was significantly associated with increased likelihood of not having a strong and supportive relationship with family, lack of social contact, absence of participation in activities of long-standing interest, absence of involvement in a day program, as well as lack of involvement in recreational activities; though it was not related to interpersonal conflict. Attention should be equally paid to the social correlates of pica rather than solely concentrate on its health risks. Implications for the community supports needed to ensure the successful transition of persons with pica from institutional to community settings.

Basquill et al., (2004) investigated attributional bias and social problem-solving deficits in two groups of adult males (aggressive vs. nonaggressive) with mild mental retardation. When presented with vignettes depicting various problem situations, aggressive participants were less accurate in correctly identifying interpersonal intent, characterized by more problem-solving deficits, and generated higher numbers of aggressive solutions to resolve problems as compared to their nonaggressive counterparts. The present results support the applicability of contemporary models of social information processing and adjustment with regard to reactive aggression to men with mental retardation.

According to Drew et al., (1996) one of the greatest needs in the area of socialization for adults with mental retardation is access to social outlets. Because adults with mental retardation lack the social sophistication that most children learn through observation, many of them are unable to plan and
successfully carry out social activity. Their social problems include several facets, such as providing transportation, planning parties, asking for and accepting dates, behaving on dates, and financing social activities.

### 2.12. PARENTAL EXPECTATION

Narayan and Ajit (1991) explored the feasibility of systematic training of parents in enhancing skills development in a mentally retarded child. This home-based training was conducted on a moderately retarded female child of 5 years of age. Training for the father of the child lasted about 45 minutes in each session. This training proved very effective in this given case as the child has acquired and maintained the skills.

Old age is often regarded as a time of reduced functional capacities, decreasing community participation and narrowing horizons. Such views are sometimes reflected in the nature of programs and services, and the more limited expectations that service providers hold about older people. Carmody (1997) reports on the findings of a qualitative study of the later life experiences of 62 older people (over 55 years) with intellectual disability. Contrary to the often negative stereotypes, in later life, many of this group experienced considerable personal growth, broadened their horizons and increased their personal autonomy and independence. However, for them, later life was also a time of increased vulnerability to inappropriate residential environments, residential mobility, loss and disruption of social networks and reduced access to specialist disability services. Conclusions are drawn about the ways in which later life opportunities can be safeguarded and vulnerabilities reduced through the development of appropriate policies and services for older people with intellectual disability.

Paul and Vanaja (2012) conducted a study on parents’ perception on developing social skills among children with intellectual disability in Guntur district, Andhra Pradesh. Parents preferred developing social skills like speaking courteously, meaningful interaction and participation in social
functions independently. Parents have accorded higher level of importance on social skills through smiling in response (59%), obeying commands (56%) and behaving appropriately with opposite sex.

Veronica and Shanty (2013) examined parental perception on problems faced by adolescent girls with mild mental retardation. The results indicate that 6% of parents have perceived high problems, 6.20% have perceived moderate problems, and 74% have perceived only low problems for their adolescent girls with mild mental retardation. The demographic variables were found to be not a significant factor.

Sahay et al., (2013) examined a total of 45 parents of children with intellectual disabilities; children were under training at National Institute for the Mentally Handicapped, Regional Centre New Delhi. The Family Needs Survey Scale (Bailey and Simeonsson, 1988) was used to find out the needs of the parents of intellectual disabilities. Finding suggested that parents referred to strong needs about information of current and future service available in society and the community (88.7%) which is followed by basic expenses (82.7%), teaching strategies and therapy (80%), day care services (77.8%). Parents showed less expected needs towards the professional influences (Minister, 4.4%). This study indicates the need to understand the implementation of Government Policies and services model in the community to provide financial support to family with intellectual disabilities.

Taylor et al., (2010) examined how educational expectations of parents with mild intellectual deficits had for their children shaped their children’s attainment, and how parents’ own intellectual limitations affected this process. They identified 612 parents with mild intellectual deficits and 2712 comparison parents from the Wisconsin Longitudinal Study, a prospective longitudinal study that followed participants from ages 18 to 64. Compared to the norm, parents with mild intellectual deficits expected their children to complete less education, even after controlling for socio-demographic
background variables, and children of parents with mild intellectual deficits completed fewer years of education. For both groups, parental expectations were the strongest predictor of attainment. Results suggested that disparities in education are shaped in part by parents’ beliefs about educational opportunities.

In a study by Bigby (2000) which explored the lives of older adults with an intellectual disability one participant “Bronwyn” talked about how she felt her mother had overprotected her and denied her opportunities to build social opportunities. When talking about her mother “Bronwyn” said: she wouldn’t let me go out. She didn’t think I was as old as I am. She treated me like a little girl and she still didn’t think I was grown-up. She wouldn’t let me be friends with anybody. She wouldn’t even let me talk to anybody. There were a lot a people I could have talked to that I liked. I used to go shopping with mum but she wouldn’t let me talk to anybody up at the shopping. She didn’t used to let me do anything. She was very protective of me.

Iftar (2008) determined whether parents (three mothers and one grandmother) could implement Community-based instruction with simultaneous prompting reliably for teaching community skills to their children and the effects of parent-delivered intervention on teaching the community skills. Maintenance and generalization effects of the intervention were also analyzed in the study. Lastly, the study was designed to reveal the participants’ opinions about the intervention. Results showed that all parents implemented the intervention with a high degree of treatment integrity. Parent-delivered intervention was effective on teaching community skills. Participants were able to maintain the acquired community skills over time and generalized the acquired skills to generalization sites. The participants’ opinions regarding the social validity aspects of the study were positive in general.
Narayan et al., (1993) found out the correlation of six variables namely age, sex, literacy, locality of living, level of retardation and duration of follow-up with the expectations of 100 parents of children who attend the home-based services at the National Institute for the Mentally Handicapped, Secunderabad. The intercorrelation among the six independent variables and the depended variable revealed that age of the child and duration of follow-up have a high correlation (p<0.01), and literacy of the parents and duration of follow up were positively correlated (p<0.05 level). It was also found that age and duration of follow up have a positive correlation.

Card (1983) found that in a survey of parents of adults with mental retardation living at home, that the vast majority of the respondents supported independent living training but were reluctant for this to apply to their offspring. Nearly all parents intended to keep their offspring at home until age or ill health made this impossible. Adolescents become independent by rejection of certain aspects of their parents. In an adolescent with a mental handicap this may well not occur. Card (1983) suggested that without this rejection they are unable to regard their own offspring as adult and are not prepared to face the pain and loss involved in readjusting to a new and more separate relationship.

2.13. SUMMARY

The review helped the investigator to identify the research works attempted in the area of functional abilities and problems of persons with intellectual disability. The review also helped her considerably, in deciding the specific objectives as well as in the formulation of hypotheses for the current investigation. Decisions regarding the selection and development of the most appropriate tools for data collection, sample and appropriate methodology for executing the present study, and finally the interpretation of results were facilitated by the review of related literature.