CHAPTER – II

REVIEW OF RELATED LITERATURE

Research project to occupy a place in the development of a discipline, the researcher must be thoroughly familiar with both previous theory and research. To assure this familiarity, every research project in the behavioral sciences has as one of its early stage, a review of the theoretical and research literature.

The literature related to any problem helps the scholar to discover what is already known, which could enable the investigator to have a better understanding of the chosen problem and various factors connected with the study. So, a number of books, journals and websites were referred. An attempt has been made to present briefly a few of the important researches and studies conducted abroad and in India, as they have significant bearing on the present study.

This chapter gives an account of the review of the related literature through which the researcher has traversed to establish the relevance and necessity of the present study. If one fails to build upon the foundation of knowledge provided by the review of literature, the researcher might miss some work already done on the same topic.

Aggarwal JC (1978), Studied of the related literatures locating, reading and evaluation of report of research as well as reports as casual observation and opinion that are related to the individual planned research project.

Buisson GJ and Jennifer S (2012), presented the article is the second in a 2-part series. Part 1 explained the needs of students in gifted education programs
(GEPs), the concept of interest-area mentorship, and how mentors help meet gifted elementary-school students' needs in light of National Association for Gifted Children standards. Part 2 explains that the goals and standards GEPs must address not only cover academics but also intellectual and affective categories. Once college instructors understand these goals and standards, they can initiate collaboration with GEP teachers and provide mentors to GEP classrooms. Deaf studies' diverse topics lend themselves to teaching, research, and discussion-perfect qualifications for GEP curricula. Examples show the "fit" between gifted education and a unit on Deaf studies. By delineating the roles of the GEP teacher, the mentor, and the college instructor, the authors provide an understanding that can enable implementation of broadly beneficial mentorship programs.

**REVIEWS ON EDUCATION**

* Buisson GJ and Salgo J (2012), assessed the Postsecondary American Sign Language (ASL) students are capable of teaching short lessons related to sign language and deaf culture to gifted students in elementary school. College students who work as interest-area mentors benefit gifted students while building their own academic discipline and professional skills. In Part 1 of a 2-part series of articles, the authors explain the unique needs shared by students in gifted education programs (GEPs), the concept of interest-area mentorship, and how mentors help meet the needs of gifted students in light of National Association for Gifted Children standards. Benefits for ASL students, gifted students, and GEP teachers are discussed. College instructors also benefit, because mentoring experiences help make mentors better students and professionals. Additionally, mentoring in gifted classes facilitates recruiting of the next generation of professionals. In this case, recruiting occurs with the best and brightest: gifted students.
Bruce SM and Parker AT (2012), assessed the six young deaf blind adults took a 1-week course on civic engagement and advocacy, which provided the focus for a participatory action research study with a collective case study design. They selected advocacy topics, were briefed on these policy issues, and were paired with experienced mentors for meetings with legislators in Washington, DC. Eight themes were identified from constant comparative and in vivo analysis of classroom discussion notes, interviews, and journals: (a) defining advocacy and advocate, (b) rights and equality, (c) expectations, (d) role of education in change, (e) deaf and blind expertise, (f) characteristics of effective change agents, (g) advocacy is teamwork, (h) future advocacy. In the classroom, the participants learned about policy issues, communication considerations, and leadership, then applied this knowledge in the legislative arena. Through the advocacy process, they learned to apply their personal strengths as advocates and experienced the importance of teamwork in advocacy.

Cortelazzo S (2012), assessed the therapeutic role of mediastinal radiotherapy and stem cell transplantation (SCT) in lymphoblastic lymphoma (LL) remains controversial. In a risk-oriented design, we adopted a flexible treatment program in which (1) patients with persistent mediastinal abnormality, evaluated by post-induction computed chest tomography, received mediastinal irradiation; and (2) those with persistence of minimal residual disease (MRD), evaluated by MRD analysis of the bone marrow, and underwent stem cell transplantation. Twenty-eight out of 30 patients (T-lineage, n = 24; B-lineage, n = 6) achieved a complete response. Of 21 patients with mediastinal mass, 13 (62%) achieved a complete response after chemotherapy alone, while 6 (28.5%) required additional irradiation. Eleven patients were evaluated for MRD: 6 were
negative and 5 positive. On the basis of MRD findings and clinical risk characteristics, 14 patients underwent stem cell transplantation, 13 received maintenance chemotherapy, and 1 had local radiotherapy. Five patients relapsed. Among the 14 non-irradiated patients with T-LL, the mediastinal recurrence rate was only 7%. After a median follow-up of 3.9 years, 21 patients who responded were alive without recurrence (75%). The projected 5-year survival, disease-free survival, and relapse rate were 72%, 77%, and 18%, respectively. This program induced high remission and survival rates, indicating the feasibility and the benefits potentially associated with a selective, response-oriented policy of mediastinal irradiation and a concurrent MRD-based strategy to assign adult LL patients to stem cell transplantation.

Easterbrooks SR and Beal-Alvarez JS (2012), identified that reading outcomes for students in upper grades who are d/Deaf and hard of hearing (d/Dhh) have typically rested around the late 3rd to early 4th grade. In recent years, wide-scale state-level testing has called into question these prognostications. The authors conducted a descriptive, multiunit, embedded-designs case study of 7 states' data from multiyear annual assessments of reading of participants in grades 3, 5, and 8, and in high school. Participants, states' definitions of reading outcomes, and states' reported reading results are described. The authors, who found that many students are reading at levels above the perceived 3rd-to-4th-grade "glass ceiling," build the case for a more hopeful look at reading outcomes for these students than that of the past and recommend approaches for acquiring wide-scale data that will allow professionals in the field to better understand reading outcomes in this population.
REVIEWS ON PHYSICAL EDUCATION

Motl RW (2012), examined changes in walking function associated with combined exercise training consisting of aerobic, resistance, and balance activities in persons with MS who had recent onset of gait impairment. Thirteen participants with significant disability due to MS (Expanded Disability Status Scale range = 4.0-6.0) completed the Multiple Sclerosis Walking Scale-12, 2 trials of the Timed 25-Foot Walk, the Timed Up & Go, and functional ambulation profile score derived from 4 walking trials on an instrumented walkway (Gait) before and after an 8-week training period. The training program was designed by a physical therapist and was performed 3 days per week under the supervision of an exercise specialist. In week 1, the session was 15 minutes in duration (i.e., 5 minutes of each mode of exercise), session durations were increased by approximately 5 minutes per week up to a maximum of 60 minutes in week 8 (i.e., 20 minutes of each mode of exercise). These results suggest that a moderately intense, comprehensive, combined exercise training program represents a rehabilitation strategy that is associated with improved walking mobility in a small sample of persons with MS who have recent onset of gait impairment.

Roohafza H (2012), designed to assess the effectiveness of stress management training in improving the ability of coping with stress in a large population. Five cross-sectional studies using multistage cluster random sampling were performed on adults aged ≥ 19 years between 2000 to 2005 in Isfahan and Najafabad (Iran) as intervention cities and Arak, Iran as the control city within the context of Isfahan Healthy Heart Program. Stress management training was adapted according to age and education levels of the target groups. In a 45-minute home interview, demographic data, General Health Questionnaire (GHQ)
and stress management questionnaires were collected. Data was analyzed by t-test, linear regression and general linear model. Trends of both adaptive and maladaptive coping skills and GHQ scores from baseline to the last survey were statistically significant in both intervention and reference areas (P < 0.001). While adaptive coping skills increased significantly, maladaptive coping skills decreased significantly in the intervention areas. Furthermore, stress levels decreased significantly in the intervention compared to the reference area. Stress management programs could improve coping strategies at the community level and can be considered in designing behavioral interventions.

Routhier F (2012), tested the hypotheses that, in comparison with a control group that received standard care, users of manual wheelchairs who also received the French-Canadian version of the Wheelchair Skills Training Program (WSTP) would significantly improve their wheelchair-skills capacity and that these improvements would be retained at 3 months. Multicenter, single-blind, randomized controlled trial. Three rehabilitation centers in Montréal, Quebec, Canada. Manual wheelchair users (N=39), a sample of convenience. Participants were randomly allocated to the WSTP or control groups. Participants in both groups received standard care. Participants in the WSTP group also received a mean of 5.9 training sessions (a mean total duration of 5h and 36min). The French-Canadian version of the Wheelchair Skills Test (WST) (Version 3.2) was administered at evaluation at first time period (baseline) (t1), evaluation at second time period (post training) (t2) (a mean of 47d after t1), and at evaluation at third time period (follow-up) (t3) (a mean of 101d after t2). WSTP training improves wheelchair skills immediately after training, particularly at the community-skills level, but this study did not show statistically significant differences between the groups at 3 months.
Smith CE (2012), analyzed the Adolescent health and health literacy are critical health topics recognized in Healthy People 2020. Evidence indicates that adolescents who are d/Deaf have unique health-related needs, yet health communication efforts have not reached them. Despite the Internet's exponential growth and the growth of online health information-seeking behavior among adolescents, reliable information devoted specifically to d/Deaf adolescents who communicate primarily in ASL is rare. D/deaf adolescent females face numerous challenges accessing web-based health information to enhance their decision making about important health issues such as body image, physical activity and nutrition, puberty, and relationships. A strong need exists for interdisciplinary professionals to investigate the health interests and online health information-seeking behaviors of this group in order to effectively plan, implement, and evaluate a web-based health repository that delivers content in ASL. This Call to Action represents a first step in addressing that need.

Stephenson MR (2012), conducted to evaluate the effectiveness of a comprehensive training program for carpenters. This training was paired with audiometry and counseling and a survey of attitudes and beliefs in hearing loss prevention. All participants received hearing tests, multimedia instruction on occupational noise exposure/hearing loss, and instruction and practice in using a diverse selection of hearing protection devices (HPDs). A total of 103 apprentice carpenters participated in the Year 1 training, were given a large supply of these HPDs, and instructions on how to get additional free supplies if they ran out during the 1-year interval between initial and follow-up training. Forty-two participants responded to the survey a second time a year later and completed the Year 2
training. Significant test-retest differences were found between the pre-training and the post-training survey scores. Both forms of instruction as individual versus group produced equivalent outcomes. The results indicated that training was able to bring all apprentice participants up to the same desired level with regard to attitudes, beliefs, and behavioral intentions to use hearing protection properly. It was concluded that the health communication models used to develop the educational and training materials for this effort were extremely effective.

REVIEWS ON MULTIPLE IMPAIRMENT

Theodorou A and Skordilis E (2012), examined stride pattern characteristics of Class F11 visually impaired long jumpers and triple jumpers. Athletes demonstrated initial ascending footfall variability followed by descending variability, on the second long jumpers and third triple jumpers stride prior to take-off, at a mean distance of 6.26 m long jumpers and 7.36 m triple jumpers from the take-off board. Toe-board-distance variability reached a maximum value of 0.36 m and 0.38 m for the long and triple jump, respectively. Last stride toe-board-distance variability was 0.29m in long jump and 0.25m in triple jump. Class F11 visually impaired athletes’ exhibit regulation of goal-directed gait analogous to that of non-visually impaired athletes.

Williams KE (2012), examined the effectiveness of a short-term group music therapy intervention for parents of children with disabilities and explored factors associated with better outcomes for participating families. Participants were 201 mother-child dyads, where the child had a disability. Pre- and post-intervention parental questionnaires and clinician observation measures were completed to examine outcomes of parental wellbeing, parenting behaviors, and child
development. Descriptive data, t-tests for repeated measures and a predictive model tested via logistic regression are presented. This study provides positive evidence for the effectiveness of group music therapy in promoting improved parental mental health, positive parenting and key child developmental areas.

**Carbonneau H, Caron CD and Desrosiers J (2011),** associated with dementia affects the people with dementia themselves as well as their caregivers who are often left feeling powerless and incompetent in their care giving role. Most of the programs developed to support caregivers focus on burden and do not consider the positive aspects of care giving. Leisure represents a way to enhance the presence of positive aspects in the caring experience. Moreover, leisure might contribute to the maintenance of satisfactory relationships between the caregivers and the person with dementia. An adapted leisure education program was developed as a means of support to caregiver involvement. This study (n=49) aims to evaluate the impact of this program on caregivers' well-being, self-efficacy towards adapted leisure, and quality of the relationship with the care receiver. Mixed methods were used. Pretest-posttest with a follow-up design made up the quantitative part. In addition, open-end interviews (n=10) were conducted. The quantitative results showed few impacts of the program on caregivers. However, the qualitative analysis revealed that the intervention had positive impacts for the caregivers, care receivers and other family members. This study introduces caregiver support in a new, positive perspective by focusing on the positive aspects of care giving rather than the burden.

**Chen CC and Lin SY (2011),** investigated the impact of rope jumping exercise on the health-related physical fitness of visually impaired students. The
participants’ physical fitness was examined before and after the training. The exercise intensity of the experimental group was controlled with Rating of Perceived Exertion (RPE) (values ranging from 11 to 15), while the control group did not participate in the exercise. A dependent samples t-test indicated significant differences in both groups between pre- and post-training. Through ANCOVA analysis, there was a significant difference (p<.05) in the flexibility and aerobic capacity for the experimental group and a significant improvement on their physical fitness (p<.05).

George CL, Oriel KN, Blatt PJ and Marchese V (2011), determined if participation in a community-based fitness program improves: a) strength and endurance, b) self-concept and quality of life, and c) positive social interactions among participants with disabilities. Nineteen children completed the study (10 experimental group, 9 control group). Pre/post testing included body mass index (BMI), energy expenditure index (EEI), Presidential Fitness Test (PFT), and strength testing using a handheld dynamometer, PedsQL, and the Piers-Harris 2 Self-Concept Scale (PH-2). The experimental group participated in an 8-week exercise program two times per week and was given a home exercise program (HEP). No statistically significant differences were observed in BMI, EEI, PFT, strength, quality of life, or self-concept. A statistically significant difference in social interactions was found between the first and second half of the exercise program while the children performed group activities and ran track based on repeated measures MANOVA at p<0.05. While changes in fitness may not be observed following an 8-week exercise program, improvements in social interactions may be possible.
**Kwok TC et.al (2011)**, Studied on the effect of a low intensity coordination exercise on the elderly with limited mobility are sparse. This prospective study attempted to compare the effectiveness of a customized coordination exercise and a strength exercise in improving the cognitive functioning and physical mobility on the elderly. Participants from two centers for the elderly were allocated to practice either an 8-week coordination training (CT) program or an 8-week towel exercise (TE) program. The Chinese Mini-Mental State Examination and Chinese Dementia Rating Scale (CDRS) were used to measure cognitive functioning of participants, and Timed Up-and-Go test for physical mobility. These assessments were administered before and after the program. Findings from this prospective study demonstrated that low-intensity level mind-body exercise could be beneficial to the cognitive functioning of older adults.

**Murphy WJ (2011)**, assessed the effect of training instruction, whether presented as the manufacturer's printed instructions, a short video training session specific to the product, or as a one-on-one training session was evaluated using four hearing protection devices with eight groups of subjects. Naïve subjects were recruited and tested using three different forms of training: written, video, and individual training. The group averages for A weighted attenuation were not statistically significant when compared between the video or the written instruction conditions, regardless of presentation order. The experimenter-trained A-weighted attenuations were significantly greater than the written and video instruction for most of the protectors and groups. For each earplug, the noise reduction statistic for A-weighting (NRS A) and the associated confidence intervals were calculated for the 80th and 20th percentiles of protection. Across subject groups for each protector, the differences between NRS A ratings were found to be not statistically significant.
Several comparisons evaluating the order of testing, the type of testing, and statistical tests of the performance across the groups are presented.

Hamdi NR et al (2011), evaluated the feasibility and effectiveness of adapting the Job Seekers' Workshop (JSW) to a residential setting within a Massachusetts-based substance use disorder treatment agency. Implementation of the adapted JSW consisted of a continual sequence of three weekly sessions that focused on job interview rehearsals, practice completing job applications, and identification of job leads. Data were compiled on the employment rates of the 188 patients discharged from the residential treatment program during July - December 2006 (baseline participants, n = 95) and January - June 2007 (JSW intervention participants, n = 93). The effectiveness of the adapted JSW was evaluated through a comparison of baseline and intervention participants' employment rates at discharge from residential treatment. Further evaluation of the JSW in residential settings is necessary, but this preliminary research suggests that the intervention could begin to address the need for vocational services in residential treatment for substance use disorders.

REVIEWS ON SPORTS MEDICINE

Harwell TS et al (2011), assessed the factors associated with achieving the 7% weight loss goal among participants enrolled in an adapted Diabetes Prevention Program (DPP). Adults at high-risk (N=989) for CVD and diabetes were enrolled in the lifestyle intervention. Multiple logistic regression analyses were used to identify factors associated with achieving the weight loss goal. Overall 37% of participants achieved the weight loss goal. Participants who were older, male, had a lower baseline BMI, self-monitored their fat and caloric intake more frequently, and
who achieved higher levels of physical activity were more likely to achieve the weight loss goal compared to participants without these characteristics. In multivariate analyses more frequent self-monitoring of fat and caloric intake and higher levels of weekly physical activity were the only factors independently associated with participant achievement of the weight loss goal. In a real-world translation of the DPP lifestyle intervention participants who achieved the weight loss goal were more likely to have monitored their dietary intake frequently and increased their physical activity markedly both in a dose-response relationship. Our findings highlight the importance of supporting participants in lifestyle interventions to initiate and maintain dietary self-monitoring and increased levels of physical activity.

Vanderwood KK et al. (2011), evaluated factors associated with achievement or maintenance of a 7% weight loss goal post intervention among adults at high-risk for cardiovascular disease (CVD) and diabetes who participated in an adapted Diabetes Prevention Program (DPP) intervention. High-risk adults completed the intervention in 2008 or 2009 (N=466). In 2010, we conducted a follow-up survey of participants to assess characteristics, behaviors and barriers associated with the maintenance or achievement of the weight loss goal. Thirty-nine percent of respondents (73/188) maintained or achieved the goal post intervention. Participants who achieved the goal were more likely to have attended more intervention sessions, and to have lost more weight during the intervention compared to participants who did not achieve the goal. Participants who achieved or maintained the goal post intervention were more likely to engage in behaviors related to weight loss maintenance. Our findings suggest maintenance or achievement of a weight loss goal post intervention among participants in
an adapted lifestyle intervention is consistent with the original DPP. Our findings also highlight the relationship between maintaining or achieving a weight loss goal post intervention and behaviors that can be reinforced and barriers that can be mitigated.

Seixas NS et.al (2011), Hearing protection devices (HPD) remain a primary method of prevention of noise-induced hearing loss despite their well-known limitations. A three-pronged intervention to increase HPD use was conducted among construction workers and included a baseline hearing loss prevention training, follow-up 'toolbox' (TB) reinforcement trainings, and use of a personal noise level indicator (NLI). A total of 176 subjects on eight sites completed three assessments. Prior to intervention, HPDs were used an average of 34.5% of the time and increased significantly, up about 12.1% after intervention and 7.5% two months after interventions were completed. The increase in HPD use was greatest among the group receiving both TB and NLI interventions; up about 25% from baseline, and this group was about two times more likely to use HPDs than the BL (baseline) training only group. This study demonstrates the mild impact of a well-constructed HPD use training and provides support for the additional use of a personal NLI to increase use of HPDs among construction workers. The most effective procedures for using such instruments require further exploration.

Chan CL, Ngai EK, Leung PK AND Wong S (2010). examined the effect of the adapted virtual reality cognitive training program in older adults with chronic schizophrenia. Older adults with chronic schizophrenia were recruited from a long-stay care setting and were randomly assigned into intervention (n = 12) and control group (n = 15). The intervention group received 10-session of VR program that
consisted of 2 VR activities using IREX. The control group attended the usual programs in the setting. The results of the current study indicate that engaging in the adapted virtual reality cognitive training program offers the potential for significant gains in cognitive function of the older adults with chronic schizophrenia. From the results of the present investigation, it is also concluded that significant improvement on AAHPER Youth Fitness components due to adapted training program.

Druet C, Ong K and Levy Marchal C (2010), described the Former definitions of metabolic syndrome (MS) in children have been adapted from adult metabolic syndrome definitions using age-related thresholds for each biochemical component, whereas the International Diabetes Federation (IDF) definition is based on absolute values. We compared the IDF childhood metabolic syndrome definition (IDF- metabolic syndrome) to the adapted National Cholesterol Education Program (adapted-NCEP) definition in overweight children. 300 overweight and obese children were included with a median age of 11 years and BMI SDS of +4.7. Below 10 years of age, the frequency of metabolic syndrome according to the adapted-NCEP- metabolic syndrome definition was 18.6%, and 86.1% had abdominal obesity. In children aged 10 to <16 years (n = 214), the frequency of IDF- metabolic syndrome was 8.9% compared to 14.5% byadapted-NCEP. IDF- metabolic syndrome children had a larger waist circumference, and higher triglycerides, fasting insulin and tended to be older than the intermediate severity group of children with metabolic syndrome only according to adapted-NCEP. Children with metabolic syndrome only according to adapted-NCEP (IDF- metabolic syndrome negative), differed from Non- metabolic syndrome children in systolic blood pressure, triglycerides and high-density lipoprotein cholesterol. The
recent IDF- metabolic syndrome criterion in children represents a more severe definition and appears to identify a group of children with higher fasting insulin than the adapted- metabolic syndrome definition which uses age-related thresholds (90th percentile).

Fragala-Pinkham M, O'Neil ME and Haley SM (2010), described a pilot aquatic exercise program for children with disabilities, to evaluate the program, and to determine areas of strength and areas needing modifications. A summative program evaluation design was used to assess this twice per week aquatic exercise program lasting 14 weeks. Sixteen children, ages 6-12 years, with developmental disabilities participated in the program. Children swam laps, participated in relay races and water basketball games, and performed arm and leg strengthening exercises using aquatic noodles, foam barbells, and water for resistance. Swimming skills, program evaluation questionnaires, physical activity questionnaires, and interviews of pool site directors were used to determine program outcomes. The program was successful in achieving its objectives and recommendations for application of this program are provided.

Hopson LM and Holleran Steiker LK (2010), evidenced base for effective substance abuse prevention programs for youth, there is a need to facilitate the implementation and evaluation of these programs in real world settings. This study evaluates the effectiveness of adapted versions of an evidence-based prevention program, keep in' it REAL (kiR), with alternative school students. Programs are often adapted when used in schools and other community settings for a variety of reasons. The kiR adaptations, developed during an earlier phase of this study, were created to make the curriculum more appropriate for alternative high
school youth. The adaptations were evaluated using a quasi-experimental design in which questionnaires were administered at pretest, posttest, and follow-up, and focus groups were conducted at posttest. MANOVA analyses indicate significantly reduced intentions to accept alcohol and, for younger participants, reduced alcohol use. Focus group data support the need for age appropriate prevention content. The authors discuss implications for practitioners implementing prevention programs in schools.

Nabeyama B and Sturmey P (2010), analyzed the effects of self-recording and behavioral skills training on guarding responses of 3 staff members while they assisted 3 students with multiple disabilities to ambulate. The intervention increased the percentage of correct posture and guarding responses and the distance that students ambulated. These effects generalized when staff taught new students.

Taguchi N (2010), studied suggest that exercise training improves physical performance and health-related quality of life (HRQOL) among elderly people; most of these studies have investigated relatively healthy persons. The objective of the present study was to determine the effects of a 12-month multi component exercise program on physical performance, daily physical activity, and HRQOL among very elderly people with minor disabilities. The subjects consisted of 65 elders (median age: 84 years) who were certified to receive long-term care in the form of support only or Level 1 care (the lowest level of care required); 31 were allocated to the intervention group and 34 to the control group. The intervention group participated in supervised exercises once a week for 12 months and in home-based exercises. The exercise program consisted of various exercises related to flexibility, muscle strength, balance, and aerobic performance. The 12-month multi component exercise
program may effectively improve and maintain the physical performance of very elderly individuals with minor disabilities.

Xenakis N and Goldberg J (2010), analyzed a comprehensive health and wellness program that serves young women, ages 14 to 21, with physical disabilities. The program is a component of the Initiative for Women with Disabilities (IWD), a hospital-based center serving women with physical disabilities/conditions that offers accessible gynecology, primary care, physical therapy, nutrition consultations, exercise and fitness classes, and wellness and social work services. Recent literature has shown that young women with physical disabilities often face physical and emotional barriers to their own health and wellness. This group of adolescents often has difficulty developing a healthy image of their bodies, especially compared with their able-bodied peers. Unhealthy attitudes regarding the body image and sexuality of those with physical differences are often perpetuated by the media, peers, and parents. People with disabilities have become increasingly able to live fulfilling lives in recent decades. This is due largely to studies that have confirmed that once barriers are addressed and minimized, young women with physical disabilities lead active and productive lives and have much to contribute to society. The goal of the Young Women's Program (YWP), established in 2006, is to help young women adopt healthy lifestyles by exposing them to a carefully planned curriculum. The program provides a variety of classes and workshops, expert instruction, and access to resources and a network of peers and mentors. The ultimate goal is for the participants to apply the concepts learned in the group sessions to identify and evaluate their personal goals and develop health and wellness plans for achieving these goals. The results to date suggest that the YWP addresses the transitional challenges cited in the literature that young women
with physical disabilities face from adolescence to adulthood. The structure of the program, which combines individual and group sessions, and the focused content appear to have a positive impact on the participants' lives by exposing them to experiences that promote self-determination and self-competence. By providing opportunities for socialization with peers and mentors and exposure to community resources, and by helping participants to develop self-care skills and to set goals for a healthy lifestyle, the program facilitates leading an independent life. The efficacy of the YWP will be determined by annual follow-up studies as participants enter adulthood.

REVIEWS ON COMMUNITY HEALTH AND PREVENTION

Baydala LT et.al (2009) an evidence-based substance abuse prevention program was reviewed and adapted by the community to ensure that it incorporated their cultural beliefs, values, language, and visual images. The adapted program was delivered to students at Alexis Nakota Sioux Nation School and changes in student participants' knowledge, attitudes, refusal skills, and self-beliefs were measured. Benefits and challenges of adapting the program were documented. The principles of community-based participatory research (CBPR) and the Canadian Institute for Health Research, Guidelines for Research Involving Aboriginal People, provided a frame of reference for the work throughout the research process. A pre-/posttest questionnaire was used to measure changes in student participants' drug and alcohol refusal skills, self-beliefs, and knowledge of the negative effects of drug and alcohol use. Focus groups (FGs) documented community members' experiences of and responses to the program adaptations and delivery. Results included (1) positive changes in students' drug and alcohol refusal skills, self-beliefs, and knowledge of the negative effects of drug and alcohol use,
(2) ownership of and investment in the program by the community, (3) teaching approaches that correspond with the learning contexts, worldview, and relationships of the community, and (4) participation of community Elders. Quantitative and qualitative measures provide evidence for the importance, benefits, and challenges of employing a culturally adapted evidence-based substance abuse prevention program with Aboriginal students attending a First Nations school.

Finch EA, Kelly MS, Marrero DG and Ackermann RT (2009), described efforts to develop and administer a formal curriculum to train community workers to deliver a group-based adaptation of the Diabetes Prevention Program (DPP) lifestyle intervention in YMCA settings. The DPP demonstrated that a structured diet and physical activity intervention that achieves and maintains modest weight loss for overweight adults with impaired glucose tolerance can significantly reduce the development of diabetes. Although tens of millions of American adults could benefit from access to the DPP lifestyle intervention, there currently is no available model for nationwide dissemination of this highly beneficial and cost-effective approach to diabetes prevention. A description of 2 ongoing randomized pilot studies provides information about the feasibility and effectiveness of future efforts to apply this new training curriculum on a national scale. Diabetes educators are challenged to partner with community organizations and other health care workers for extensive distribution of the DPP lifestyle intervention messages.

Johnson CC (2009), analyzed evidence of the benefits of physical activity for youth with developmental disabilities. Key word searches for "disability," "physical activity," "exercise," "fitness," and "sport" in major databases. A total of 3263 citations were found. Study Inclusion/Exclusion Criteria: Systematic reviews
and articles about studies quantitatively examining the effects of physical activity in youth with developmental disabilities ages 0 to 20 years were included. Only articles published in English in peer-reviewed journals were included. A Measurement Tool to Assess Reviews criteria were used for systematic reviews; Grading of Recommendations, Assessment, Development, Evaluation criteria were used for observational studies; and Population, Intervention, Comparison, Outcome criteria were used for all studies. Data, shown in table format, were synthesized in relation to five research questions. Evidence exists that physical activity is beneficial for youth with developmental disabilities. Further research studies are needed that are of greater scientific rigor including larger sample sizes, control groups, and stringent, replicable methodology.

Leff SS et.al (2009), associated with peer relationship difficulties, internalizing and externalizing behaviors, social processing deficits, and possibly later mental health disorders among girls has emphasized the need to address the unique expression of aggression among females. Despite these findings, almost all aggression interventions have been directed toward physically aggressive boys. In the current article, the authors describe the acceptability and initial effectiveness of a culturally adapted social problem-solving/social skills intervention for inner-city 3rd- to 5th-grade urban, African American, relationally aggressive girls called the Friend to Friend Program. The authors partnered with youth, teachers, parents, and playground supervisors to design the program, and the current study presents preliminary data suggesting that the intervention is viewed as highly acceptable by participating girls and teachers. Further, the intervention appears to have promise for decreasing at-risk girls' levels of relationally and physically aggressive behaviors, hostile attributions, and loneliness.
Tandstad T et al (2009), offered minimized risk-adapted adjuvant treatment on a nationwide basis for patients with clinical stage 1 (CS1) nonseminomatous germ-cell testicular cancer (NSGCT). The aim was to reduce the risk of relapse and thereby reducing the need of later salvage chemotherapy while maintaining a high cure rate. From 1998 to 2005, 745 Norwegian and Swedish patients were included into a prospective, community-based multicenter Swedish and Norwegian Testicular Cancer Project (SWENOTECA) management program. Treatment strategy depended on the presence or absence of vascular tumor invasion (VASC). Vascular tumor invasion -positive patients were recommended brief adjuvant chemotherapy (ACT) with bleomycin, topside, and cisplatin (BEP), whereas vascular tumor invasion -negative patients could choose between ACT and surveillance. At a median follow-up of 4.7 years, there have been 51 relapses. On surveillance, 41.7% of vascular tumor invasion + patients relapsed, compared with 13.2% of vascular tumor invasion - patients. After one course of BEP, 3.2% of vascular tumor invasion + and 1.3% of vascular tumor invasion - patients relapsed. The toxicity of adjuvant BEP was low. Eight patients have died, none died from progressive disease. One course of adjuvant BEP reduces the risk of relapse by approximately 90% in both vascular tumor invasion + and vascular tumor invasion - CS1 nonseminomatous germ-cell testicular cancer, and may be a new option as initial treatment for all CS1 nonseminomatous germ-cell testicular cancer. One course of adjuvant BEP for vascular tumor invasion + CS1 reduces the total burden of chemotherapy compared with surveillance or two courses of BEP. SWENOTECA currently recommends one course of BEP as standard treatment of vascular tumor invasion + CS1 nonseminomatous germ-cell testicular cancer, whereas both surveillance and one
course of BEP are options for vascular tumor invasion - CS1 nonseminomatous
germ-cell testicular cancer.

Benedetti MG et.al (2008), assessed the effects of an adapted physical
activity program in a group of elderly subjects with flexed posture: clinical and
instrumental assessment. Flexed posture commonly increases with age and is
related to musculoskeletal impairment and reduced physical performance. The
purpose of this clinical study was to systematically compare the effects of a physical
activity program that specifically address the flexed posture that marks a certain
percentage of elderly individuals with a non specific exercise program for 3 months.
Participants were randomly divided into two groups: one followed
an Adapted Physical Activity program for flexed posture and the other one
completed a non-specific physical activity protocol for the elderly. A
multidimensional clinical assessment was performed at baseline and at 3 months
including anthropometric data, clinical profile, measures of musculoskeletal
impairment and disability. The instrumental assessment of posture was realized
using a stereo photogrammetric system and a specific biomechanical model
designed to describe the reciprocal position of the body segments on the sagittal
plane in an upright posture. The Adapted Physical Activity program determined a
significant improvement in several key parameters of the multidimensional
assessment in comparison to the non-specific protocol: decreased occipital-to-wall
distance, greater lower limb range of motion, better flexibility of pectorals,
hamstrings and hip flexor muscles, increased spine extensor muscles strength. Stereo
photogrammetric analysis confirmed a reduced protrusion of the head and revealed a
reduction in compensative postural adaptations to flexed posture characterized by
knee flexion and ankle dorsiflexion in the participants of the specific program.
The Adapted Physical Activity program for flexed posture significantly improved postural alignment and musculoskeletal impairment of the elderly. The stereo photogrammetric evaluation of posture was useful to measure the global postural alignment and especially to analyze the possible compensatory strategies at lower limbs in flexed posture.

Marini M et al (2008), described Sarcopenia is the physiological age related decline in muscle mass and strength. It is a main cause of muscle weakness and reduced locomotors ability and its adverse effects contributes to a reduction in physical function and performance with decreased independence and quality of life. In fact, sarcopenia has been associated with disability and morbidity in the elderly population. Therefore, prevention and treatment of sarcopenia are areas of intense interest. The studies suggest that the pathogenesis of sarcopenia is multifactorial, but the decreased physical activity with aging appears to be a key factor involved in producing this pathology. We investigated the role of adapted physical activity on the adverse effects of the sarcopenia: we examined the effect of a specific resistance training program in twenty sedentary older men, 60-80 years old, with sarcopenia. The program was performed three days a week for 18 total weeks with isotonic machines; in particular the exercises effected with leg press, chest press and vertical row were monitored using a Globus-Tesys dynamometer with Real Power. The maximum repetition test (1RM) was used to calculate the percentage of work and formulate the methodology. Our results demonstrated that the proposed training can improve the dynamic characteristics of muscle strength. In particular, we showed that medium-low intensity training, structured in series and repetitions with gradual increased workload, produced a time-dependent improvement of strength. Our training increased the muscle strength mainly in the lower limbs reducing the risk of
falls which frequently occurs in the elderly. Therefore, planned resistance training could be an effective countermeasure to prevent or reduce the adverse effects of the sarcopenia improving the quality of life. The physical activity should be personalized and adapted to subject's age and/or disability.

REVIEWs ON TRAINING METHODS

Tolomio S, Ermolao A, Travain G and Zaccaria M (2008), described that people affected by osteopenia/osteoporosis can benefit from an adequate amount of physical activity, counteracting the progressive loss of bone and muscle mass caused by aging. Moreover, there is increasing evidence that exercise has positive effects on bone structure. The aim of our study was to evaluate the effects on bone tissue and muscular strength of a short-term exercise program in osteopenic/osteoporotic postmenopausal women. Forty-nine osteopenic/osteoporotic postmenopausal women were divided into 2 groups: exercise and control. All subjects underwent 2 evaluations: before and after a training period. Bone quality was assessed by phalangeal quantitative osteosonography, and maximal strength of leg extensor muscles was also evaluated. The experimental group participated in a specific supervised 20-week physical activity program that included aerobic, balance, and strength training. After the training period, all bone parameters and lower-limb maximal strength were significantly improved in the exercise group (P < .05), whereas no significant changes were observed in the control group. Our study showed that a broad-based training protocol, lasting 20 weeks, can improve leg strength and bone quality parameters—main determinants of fall and fracture risk, respectively.
Borg E (2007), established a reference material for clinical use covering various aspects of speech and language functions and to relate test values to pure tone audiograms and parents' judgment of their children's hearing and language abilities. Nine speech and language tests were applied or modified, both classical tests and newly developed tests. Ninety-seven children with normal hearing and 156 with hearing impairment were tested. Hearing was 80 dB HL PTA or better in the best ear. Swedish was their strongest language. None had any additional diagnosed major handicaps. The children were 4-6 years of age. The material was divided into 10 categories of hearing impairment, 5 conductive and 5 sensors neural: unilateral; bilateral 0-20; 21-40; 41-60; 61-80 dB HL PTA. The tests, selected on the basis of a three component language model, are phoneme discrimination; rhyme matching; Peabody Picture Vocabulary Test (PPVT-III, word perception); Test for Reception of Grammar (TROG, grammar perception); prosodic phrase focus; rhyme construction; Word Finding Vocabulary Test (word production); Action Picture Test (grammar production); oral motor test. Reference values for expected speech and language development are presented that cover nearly 60% of the studied population. The effect of the peripheral hearing impairment is compensated for in many children with hearing impairment up to 60 dB HL. Above that degree of impairment, language delay is more pronounced, probably due to a loss of acuity. The importance of central cognitive functions, speech reading and signing for compensation of peripheral limitations is pointed out.

Daniell WE, Swan SS, McDaniel MM, Cohen MA and Stebbins JG (2006), evaluated noise exposures and hearing loss prevention efforts in industries with relatively high rates of workers' compensation claims for hearing loss. Washington State workers' compensation records were used to identify up to 10
companies in each of eight industries. Each company (n = 76) was evaluated by a management interview, employee personal noise dissymmetry (n = 983), and employee interviews (n = 1557). The findings raise serious concerns about the adequacy of prevention, regulation, and enforcement strategies in the United States. The percentage of workers with excessive exposure was 1.5-3 times higher using a 3 dB exchange rate instead of the OSHA specified 5 dB exchange rate. Most companies gave limited or no attention to noise controls and relied primarily on hearing protection to prevent hearing loss; yet 38% of employees did not use protectors routinely. Protector use was highest when hearing loss prevention Programs were most complete; indicating that under-use of protection was, in some substantial part, attributable to incomplete or inadequate company efforts.

Lim SY and Simser J (2005), studied the new millennium has brought about great innovation and advancement in hearing technology, early detection and intervention. This in turn has altered expectations of what children with hearing impairment are really capable of in terms of listening, developing spoken language, and academic and social performance. In Singapore, with Universal Newborn Hearing Screening in place, babies with hearing impairment can be detected early and early intervention implemented by 6 months of age. To benefit from the "critical periods" of acoustic neurological and linguistic development, early identification of hearing impairment, medical intervention, use of appropriate amplification technology and effective habilitation are vital. Auditory-Verbal practice emphasis listening to access auditory information, so that these children have the opportunity to develop intelligible speech and spoken language. Auditory-Verbal practice supports ongoing individualized diagnostic therapy with parent participation, guidance, education and support by an Auditory-
Verbal specialist. The goal of Auditory-Verbal therapy is to enable children with hearing loss to grow up in regular learning and living environments so that they can become independent, participating and contributing citizens in mainstream society.

McDonnell MK, Sahrmann SA and Van Dillen L (2005), described an intervention approach consisting of a specific active-exercise program and modification of postural alignment for an individual with cervicogenic headache. The patient was a 46-year-old male with a 7-year history of cervicogenic headache. He reported constant symptoms with an average intensity of 5/10 on a visual analogue scale where 0 indicated no pain and 10 the worst pain imaginable. Average pain intensity in the week prior to the initial evaluation was 3/10 secondary to trigger point injections. The patient's headache symptoms worsened with activities that involved use of his arms and prolonged sitting. The patient was treated 7 times over a 3-month period. Impairments of alignment, muscle function, and movement of the cervical, scapulothoracic, and lumbar regions were identified. Outcome measurements included headache frequency, intensity, and the Neck Disability Index (NDI) questionnaire. Intervention included modification of alignment and movement during active cervical and upper extremity movements. The patient also received functional instructions focused on diminishing the effect of the weight of the upper extremities on the cervical spine. The patient reported a decrease in headache frequency and intensity (1 headache in 3 weeks, intensity 1/10) and a decrease in his NDI score from 31 (severe disability) to 11 (mild disability). The patient also demonstrated improvement in upper cervical joint mobility, cervical range of motion, scapular alignment, and scapulothoracic muscle strength. Interventions that included modification of alignment in the cervical, scapulothoracic, and lumbar region, along with instruction in a specific active-
exercise program to address movement impairments in these 3 regions, appeared to have been successful in relieving headaches and improving function in this patient.

**Todres ID, Catlin EA and Thiel MM (2005)**, Critical illness is a crisis for the total person, not just for the physical body. Patients and their loved ones often reflect on spiritual, religious, and existential questions when seriously ill. Surveys have demonstrated that most patients wish physicians would concern themselves with their patients’ spiritual and religious needs, thus indicating that this part of their care has been neglected or avoided. With the well-documented desire of patients to have their caregivers include the patient's spiritual values in their health care, and the well-documented reality that caregivers are often hesitant to do so because of lack of training and comfort in this realm, clinical pastoral education for health care providers fills a significant gap in continuing education for caregivers. To report on the first 6 yrs of a unique training program in clinical pastoral education adapted for clinicians and its effect on the experience of the health care worker in the intensive care unit. We describe the didactic and reflective process whereby skills of relating to the ultimate concerns of patients and families are acquired and refined. Clinical pastoral education designed for clergy was adapted for the health care worker committed to developing skills in the diagnosis and management of spiritual distress. Clinician participants (approximately 10-12) meet weekly for 5 months (400 hrs of supervised clinical pastoral care training). The program is designed to incorporate essential elements of pastoral care training, namely experience, reflection, insight, action, and integration. This accredited program has been in continuous operation training clinicians for the past 6 yrs. Fifty-three clinicians have since graduated from the program. Graduates have incorporated clinical pastoral education training into clinical medical practice, research, and/or further training in
clinical pastoral education. Outcomes reported by graduates include the following: Clinical practice became infused with new awareness, sensitivity, and language; graduates learned to relate more meaningfully to patients/families of patients and discover a richer relationship with them; spiritual distress was (newly) recognizable in patients, caregivers, and self. This unique clinical pastoral education program provides the clinician with knowledge, language, and understanding to explore and support spiritual and religious issues confronting critically ill patients and their families. We propose that incorporating spiritual care of the patient and family into clinical practice is an important step in addressing the goal of caring for the whole person.

McBride DI (2004), analyzed Noise exposure is prevalent in mining, and as the prevalence of noise-induced hearing loss has not changed much in the past two decades; hearing conservation is an important issue. To review the literature and highlight important developments in the field. A review of the literature using OVID as the primary search engine, using the search terms as: noise, occupational; hearing loss, noise induced; ear protective devices; and mining. A total of 66 articles were found, but only 11 were in the English language and few were published in the past 10 years. This is disappointing, because neither noise exposure nor the consequent risk of noise-induced hearing loss seems to have changed much in the past 20 years. Noise is, however, a generic hazard, and this article reviews current best practice in prevention.

Paatsch LE, Blamey PJ, Sarant JZ, Martin LF and Bow CP (2004), assessed Open-set word and sentence speech-perception test scores are commonly used as a measure of hearing abilities in children and adults using cochlear implants
and/or hearing aids. These tests are usually presented auditory with a verbal response. In the case of children, scores are typically lower and more variable than for adults with hearing impairments using similar devices. It is difficult to interpret children's speech-perception scores without considering the effects of lexical knowledge and speech-production abilities on their responses. This study postulated a simple mathematical model to describe the effects of hearing, lexical knowledge, and speech production on the perception test scores for monosyllabic words by children with impaired hearing. Thirty-three primary-school children with impaired hearing, fitted with hearing aids and/or cochlear implants, were evaluated using speech-perception, reading-aloud, speech-production, and language measures. These various measures were incorporated in the mathematical model, which revealed that performance in an open-set word-perception test in the auditory-alone mode is strongly dependent on residual hearing levels, lexical knowledge, and speech-production abilities. Further applications of the model provided an estimate of the effect of each component on the overall speech-perception score for each child.

**Svensson EB, Morata TC, Nylén P, Krieg EF and Johnson AC (2004),** assessed The beliefs and attitudes regarding the risk of hearing loss and their impact on hearing protector use were investigated among Swedish workers. A questionnaire, developed by the US National Institute for Occupational Safety and Health (NIOSH), was used. The study objective was to assess workers' attitudes towards using hearing protection devices (HPDs) and to enhance the ability of workers to protect themselves from occupational hearing loss. Ninety-five per cent of the respondents were aware that loud noise could damage their hearing, 90% considered that a hearing loss would be a serious problem, and 85% believed that
HPDs could protect their hearing. However, lower percentages of workers always used the HPDs when they were noise-exposed. Fifty-five per cent of the workers indicated that they could not hear warning signals when using HPDs, and 45% of the workers indicated that they considered HPDs to be uncomfortable. These issues must be addressed to make HPD use more effective.

**REVIEWS ON MULTIPLE DISORDERS**

Bailly D, Dechoulydelenclave MB and Lauwerier L (2003), evaluated the Hearing impairment is a multifaceted condition with medical and social aspects. If the neuropsychiatric impact of deafness on children has been investigated by researchers from a variety of fields and backgrounds, their conclusion is that children with hearing impairment follow many different developmental pathways. The aim of this paper is to examine the relationships between hearing impairment and mental health and the effect of impaired communication on family development. From a review of the literature, the authors examine the relationships between hearing impairment and mental disorders in children and adolescents in terms of prevalence, clinical features and etiological factors. The family dynamics and the parents-child interactions were also explored. A number of questions remain about the neuropsychiatric and psychosocial aspects of hearing-impairment in children. For instance, few studies have been conducted to examine the impact of the different methods of communication and education on the psychosocial adjustment of deaf children. However, this review clearly shows that appropriate and effective management can occur only when the mental health professionals are know-ledge able and sensitive to the unique characteristics and experiences of hearing-impaired children and adolescents.
Lusk SL (2003), tested the effectiveness of an individually tailored multimedia intervention to increase use of HPDs by factory workers. A randomized controlled design was used to compare the effects of a tailored intervention (n= 446) with two other interventions (a non tailored predictor-based intervention (n= 447) and a control intervention (n= 432)) on workers' self-reported use of HPDs 6 to 18 months following the intervention. Only those workers receiving the tailored intervention significantly increased their use of HPDs from pretest to posttest. However, this increase significantly differed from the non tailored group but not from the control group. Individually-tailored interventions offer promise for changing behavior. In light of the similarity between the results for the tailored intervention and the control intervention groups, further research is needed to understand barriers to HPD use and how to maximize the benefits of individually tailored interventions in this setting.

Seynnes O, Hue O, Ledrole D and Bernard PL (2002), measured the effects of an original low-intensity training program, called "posture-balancing-mobility" (PBM), on muscular function. Nine non-disabled, elderly (74.3 +/- 6 years) subjects were trained with the PBM technique for 11 weeks (2 sessions per week). Mean power and fatigue index parameters were measured using an isokinetic dynamometer before and after training and compared with those recorded in another group of 9 elderly (71.1 +/- 4.3 years) subjects, who had performed aquatic exercises during the same period and with the same frequency. The mean power of the knee extension muscles increased slightly but significantly on the dominant (15.6%, p<0.05) and non-dominant sides (13.4%, p<0.05) in the PBM group, with no significant fatigue index variation. None of the parameters changed significantly for the aquatic group, and comparison of variations obtained in the two groups showed
no significant difference between their respective effects. Although the results showed slightly enhanced strength production in the PBM group, the low statistical power does not allow conclusions about the impact of this type of training intervention in its current form. Nevertheless, this pilot study provides some indication of the benefits that can be obtained from such an individualized approach. Its efficiency would most likely be improved by further exploration of the minimal threshold of intensity required for strength exercises and by measurement of its effect on functions involving neuromuscular parameters, such as balance or gait.

Blamey PJ et al (2001), assessed the eighty-seven primary-school children with impaired hearing were evaluated using speech perception, production, and language measures over a 3-year period. Forty-seven children with a mean unaided pure-tone-average hearing loss of 106 dB HL used a 22-electrode cochlear implant, and 40 with a mean unaided pure-tone-average hearing loss of 78 dB HL were fitted with hearing aids. All children were enrolled in oral/aural facilitation programs, and most attended integrated classes with normally hearing children for part of the time at school. Multiple linear regressions were used to describe the relationships among the speech perception, production, and language measures, and the trends over time. Little difference in the level of performance and trends was found for the two groups of children, so the perceptual effect of the implant is equivalent, on average, to an improvement of about 28 dB in hearing thresholds. Scores on the Peabody Picture Vocabulary Test (PPVT) and the Clinical Evaluation of Language Fundamentals showed an upward trend at about 60% of the rate for normally hearing children. Rates of improvement for individual children were not correlated significantly with degree of hearing loss. The children showed a wide scatter about the average speech production score of 40% of words correctly produced in spontaneous conversations,
with no significant upward trend with age. Scores on the open-set Consonant-Nucleus-Consonant (CNC) monosyllabic word test and the Bench Kowal Bamford (BKB) sentence test were strongly related to language level as measured by an equivalent age on the PPVT and speech production scores for both auditory-visual and auditory test conditions. After allowing for differences in language, speech perception scores in the auditory test condition showed a slight downward trend over time, which is consistent with the known biological effects of hearing loss on the auditory periphery and brainstem. Speech perception scores in the auditory condition also decreased significantly by about 5% for every 10 dB of hearing loss in the hearing aid group. The regression analysis model allows separation of the effects of language, speech production, and hearing levels on speech perception scores so that the effects of habilitation and training in these areas can be observed and/or predicted. The model suggests that most of the children in the study will reach a level of over 90% sentence recognition in the auditory-visual condition when their language becomes equivalent to that of a normally hearing 7-year-old, but they will enter secondary school at age 12 with an average language delay of about 4 or 5 years unless they receive concentrated and effective language training.

May JJ (2000), Hearing loss is a significant and unfortunately common occupational malady. Over the past several decades both the Occupational Safety and Health Administration (OSHA) and the National Institute for Occupational Safety and Health (NIOSH) have initiated efforts to better understand and to limit the occurrence of occupational hearing loss, particularly as it relates to excessive noise exposure. This paper briefly addresses the patho-physiology of noise-induced hearing loss and then describes the occupational and non-occupational factors which influence a worker's risk of hearing loss. The primary foci of this discussion are the
clinical evaluation, diagnosis, and management of occupational hearing loss. Issues of prevention, OSHA-mandated hearing conservation efforts and compensation are reviewed.

**Sriwattanatamma P and Breysse P (2000),** conducted to compare noise exposure measurements based on the recently revised noise exposure criteria recommended by the U.S. National Institute for Occupational Safety and Health (NIOSH) and the current U.S. Occupational Safety and Health Administration (OSHA) Hearing Conservation Amendment to the occupational noise standard. Daily 8-hour time-weighted average (TWA) personal noise exposures were obtained for 61 workers using dosimeters set simultaneously to the NIOSH and OSHA Hearing Conservation Amendment (OSHA-HCA) criteria. A variety of work groups with the potential for noise exposure were evaluated as a part of this investigation. Noise dose based on the NIOSH criteria was higher than the corresponding OSHA-HCA noise dose with differences in noise exposures measured under the two criteria equal to 6.6 dBA. Should the new NIOSH recommendation on noise measurement be adopted as standard, the number of workers to be enrolled in a hearing loss prevention program was estimated to increase by 2.7-fold from 23% to 75% of the study population. The results of this study indicate that if the NIOSH criteria are to be adopted as an OSHA standard, there is likely to be a substantial increase in the number of workers in hearing conservation programs.

**Sininger YS, Doyle KJ and Moore JK (1999),** studied the human infants spend the first year of life learning about their environment through experience. Although it is not visible to observers, infants with hearing are learning to process speech and understand language and are quite linguistically sophisticated by 1 year
of age. At this same time, the neurons in the auditory brain stem are maturing, and billions of major neural connections are being formed. During this time, the auditory brain stem and thalamus are just beginning to connect to the auditory cortex. When sensory input to the auditory nervous system is interrupted, especially during early development, the morphology and functional properties of neurons in the central auditory system can break down. In some instances, these deleterious effects of lack of sound input can be ameliorated by reintroduction of stimulation, but critical periods may exist for intervention. Hearing loss in newborn infants can go undetected until as late as 2 years of age without specialized testing. When hearing loss is detected in the newborn period, infants can benefit from amplification (hearing aids) and intervention to facilitate speech and language development. All evidence regarding neural development supports such early intervention for maximum development of communication ability and hearing in infants.

**Lusk SL (1997),** assessed Noise exposures Effects on hearing and prevention of noise induced hearing loss, 1. Over 30 million workers are exposed to hazardous noise on the worksite. Continual exposure to high noise levels damages and destroys hearing cells within the ear; making noise induced hearing loss an irreversible impairment. 2. Hearing conservation programs are required by law for workers in industrial settings where noise exposures equal or exceed 85 dB(A). Many workers, such as those in construction and agricultural industries, are not covered by these programs. 3. Reducing noise through engineering or administrative controls is the first line of defense. When this is not sufficient, two types of personal hearing protection devices are available: passive hearing protection devices such as ear muffs, canal caps, and ear plugs, which reduce noise mechanically; and active
noise reduction devices, which electronically cancel sound waves at the ear. 4. The most effective hearing protection devices are those with which the worker is most comfortable will use 100% of the time. The occupational health nurse has a major role in promoting increased use of hearing protection devices through continued contact with workers, administrators, and safety personnel.

Geers AE and Moog JS (1992), examined the degree to which students with profoundly impaired hearing that had been educated in oral and total communication (TC) environments developed auditory and speech skills. The sample consisted of 227 16- and 17-year-old students with profoundly impaired hearing: 127 from TC programs (63 with normal-hearing parents and 64 with deaf parents) and 100 from oral programs. Subject groups were matched in terms of age, unaided residual hearing, and IQ. On average, students from oral programs acquired more intelligible speech and made significantly better use of their limited residual hearing than did the TC students. This finding held for all TC students--those with deaf parents as well as those with normal-hearing parents. Although results of this study indicate that auditory and speech production skills are comparatively well developed in students who have consistently used spoken language throughout the day as the primary means of communicating, other factors associated with this oral sample, such as early amplification, consistent hearing aid use, early education, and parental support, may also be necessary for the development of good spoken language skills.

Miller SB and Toca JM (1979), develop a useful communication system, a 3-year-old, non-verbal autistic boy was treated for 1 year with a Simultaneous Communication method involving signed and verbal language. As this procedure
proved not useful in this case, an adaptation of Melodic Intonation Therapy (signing plus an intoned rather than spoken verbal stimulus) was tried. With this experimental language treatment, the patient produced trained, imitative and, finally, spontaneous intoned verbalizations which generalized to a variety of situations.