Patterns of Leisure and Physical Activities Among Older Adults

There is a growing need to understand the factors that influence an older adult’s decision to be more (or less) physically active and the reasons behind those decisions. This exploratory field study was undertaken to begin identifying potential predictors of the leisure and physical activity patterns of seniors. In all, 119 Canadian older adults (M age 65.9 years) were interviewed in depth by trained interviewers who administered nine instruments designed to produce data on the formers’ leisure and physical activity patterns. The test instruments included some adapted from the general literature, some standardized tools used in their original form, and others developed specifically for this study. Owing to the broad scope of the study, the quantity of data produced was diverse. A selection of the most noteworthy findings follows. The study’s respondents engaged in more leisure activities (e.g., cooking, reading, entertaining) than physical activities, and allocated more hours to leisure activities as well (average time 49.7 vs. 14.1 hrs/week). Second, the most popular physical activities were identified as walking, hiking, and bicycling. Third, although male subjects engaged in more physical activities than female subjects (4.70 activities vs. 3.99), the difference was not significant. Finally, age, the ability to articulate one’s reasons for being active, and self-reported health conditions were the best correlates of physical activity patterns among the respondents. Although the study produced a lot of data, the work was flawed by what the researchers reported as a relatively small sample of convenience. Also, the dependence on respondent self-reports raises doubts about the generalizability of the findings.


VO₂ Max of Adults With Mental Retardation

Of particular recent interest among the adult population has been the cardiovascular endurance status and related testing procedures for those with mental retardation. Issues concerning the types of tests to use, reliability and validity of measures, the training needed for proper conduct of tests, and confounding variables such as intellectual deficiencies that may distort results have been addressed by many researchers in the past 5 years. Administrative feasibility of three different predictor VO₂ max test protocols was examined in this pilot study of male adults with mental retardation. VO₂ max was measured by the Modified Balke/Ware Treadmill test, the Åstrand Rhyming Bicycle Ergometer test, and the Cooper 12-Minute Run/Walk test. Specific descriptions of individual protocols were listed in the article. The researchers provided what appears to be adequate and necessary attention to the important factors of orientation and protocol training with their subjects. This is an aspect that has not been reported in several earlier studies with this
group. Results of the study revealed a significant difference between the outcomes obtained with the three protocols. The authors discussed many of the problems previously reported with this type of testing among adults with mental retardation, including the need for sufficient practice and familiarization sessions prior to testing, pacing while running the 12-min run/walk, maintaining proper cadence during the bicycle test, and monitoring heart rates while exercising.


**Order of Movement of Cerebral Palsied**

Thirty children with cerebral palsy (CP) and 30 nonhandicapped youngsters (10 each: ages 4–5, 7–8, and 10–11) were randomly selected for the study of Piaget's order of movement. In the task, the child verbally indicates the ordering of three different colored balls presented under seven different conditions. The results indicated a significantly lower score for the CP children, with scores being significantly related to age. Rothman concluded that physical experience appears to be a prerequisite for those cognitive functions having spatial perception as a basis. Although this study definitely contributes to the body of knowledge in adapted physical education, it is not without its shortcomings. One of the difficulties in conducting research with handicapped populations is controlling for heterogeneity. For example, in this study there was no indication that the spastic CPs (83% of them) were evenly distributed across the three age groups; a partial means of control would be to just use spastic CPs as subjects. A paradigm incorporating an index of motor skill would also help obviate the heterogeneity problem.


**Electric Instruction in Adapted Physical Education**

An adapted physical education teacher working with profoundly mentally retarded students faces the problem of choosing appropriate instructional strategies. The most important consideration is motivating the students to attend and to respond to instruction. A wide range of reinforcers—food, physical contact, sensory stimulation—are commonly used to provide the motivation to perform basic movement patterns. In this article, French et al. describe how electrical (mercury) switches interfaced to tape recorders or moving toys may be used as reinforcers for improving head control in profoundly mentally retarded children. When a mercury switch is attached to a child's head or other body part, the movement of the body causes the mercury within the electrical switch to move and thus activate a given electrical device. A single switch or a sequence of switches could be used to define a specific movement behavior (movement in one, two, or three dimensions). The authors discuss the cognitive level children need in order to benefit from such a device, the normal developmental progression of head control, and instructional hints and precautions. They also describe how to modify mercury switches for these pur-
poses and how to interface them with the electrical devices. The use of mercury switches in conjunction with electrical devices that provide sensory stimulation have already proven useful, and they should continue to be useful to adapted physical educators and workers in related therapies in eliciting appropriate movement behaviors in profoundly mentally retarded children.


**Politics and Special Education**

This paper disputes a recent one by Sleeter (1986) regarding the origins of the category “learning disabilities.” Kavale and Forness stated that the category LD must be viewed as an outcome of a long series of historical forces rather than the result of ideological conflict between social classes during the 1960s. The LD category that emerged gave students who had a particular type of underachievement access to special education services. The authors felt that to suggest that the LD category was established to discriminate against minorities is erroneous since the presumed ethnic imbalance of early classes for LD students is of little consequence, and the concurrently developing compensatory education programs represent a substantial investment in the school problems of minority children. It was concluded that the fundamental problems of the field of learning disabilities, and by extension other mildly handicapping conditions, are the consequence of their politicization and not of political pressures for their establishment. In other words, there seems to be a need to explicitly define LD, and other mildly handicapping conditions, so that we can answer the question about who is or is not mildly handicapped. What was assumed was the anticipation and continuation of labeling. However, it seems inappropriate to ask for more explicit definitions of specific categories of exceptionality when we should be arguing against labeling children. Labels assume that the problem is within the child. Unfortunately, that notion seems to be the basic tenet of special education as well as physical education, and its misapplication as a solution to the problems in the educational ecosystem only masks the need for educational reform. This paper is worth reading for those interested in the politics of educating children in public schools in the United States.


**Mainstreaming the Play Environment**

One measure of success of a mainstreamed environment is the willingness of both disabled and able-bodied persons to interact. A key element to interaction in this situation is the perception of disabled persons by able-bodied peers. Past research suggests that both previous exposure to disabled individuals and the type of disability influence the interaction between the two groups. Hoenk and Mobily set out to determine the effects of previous exposure to persons with handicaps, and the salience of disability on preschoolers’ attitudes toward disabled peers. They measured
the attitude of 15 able-bodied children, enrolled in one or two preschools, toward interacting with disabled children. One independent variable was previous exposure to disabled persons (mainstreamed preschool, previous exposure at home, or low previous exposure); a second was the salience of disability in terms of attitude toward interacting with a peer. Analysis revealed a significant interaction between exposure and salience of disability. The researchers posited that the interaction effect was due primarily to the low-exposure group's less receptive attitude toward disabled peers.


Type IV Errors: Searching for Truth

A Type I error is rejection of a true hypothesis, and a Type II error is the acceptance of a false hypothesis. A Type III error occurs when the null hypothesis is correctly rejected but for the wrong reasons. These are well known errors. However, few researchers pay attention to the Type IV error proposed by Marascuilo and Levin 17 years ago. The Type IV error is an incorrect interpretation of a correctly rejected hypothesis. Kaufman et al. identify the problem of committing Type IV errors, provide hard evidence for concern, and include easily understandable conclusive remarks with far reaching ramifications. The information is useful to researchers as well as to students who will be researchers. Reviewed were 193 recently published investigations in six journals in the field of special education. The authors specifically studied interactions, post hoc procedures, and interpretations, and gave alarming examples of possible consequences from misinterpreted data. Each investigation included interaction analyses based on a two-way ANOVA design. Only 9% of the investigators interpreted the significant interaction results appropriately. The authors did not indicate where they categorized 14% of these studies, but they did report a full 77% of the investigations had committed Type IV errors. Remember, the Type IV error is not a methodological problem but rather a critical misinterpretation of results. The authors suggested, and rightfully so, that the reporting of conclusions with misinterpretation can have deleterious effects on what we actually do with special needs children as the information gets filtered to practitioners in the field or students in the classroom.


Pattern-Seer and Shape-Changer

In her own words, Bonnie Bainbridge Cohen describes herself as "a pattern-seer" and "shape-changer." These descriptors have evolved during the many years in which Cohen has explored the domain of movement. After certification as a neurodevelopmental therapist by the Bobaths, Cohen studied numerous modern dance styles, Laban movement analysis, and dance therapy. She founded the School of Mind-Body in 1973, dedicated to investigating movement and teaching a movement
framework based on anatomical, physiological, and developmental principles. Cohen's approach to working with infants and the application of her work to adults is the focus of this thought-provoking interview. Cohen's work offers clarification of connections between various systems—motor, perceptual, and psychological. Primarily this article concentrates on Cohen's description of basic movement patterns that lead to walking and how they correspond to perceptual development. Other topics include how developmental patterns can be stimulated and the potential ramifications of skipping patterns. It is encouraging to find work based on an attempt to present a comprehensive picture of movement problems as opposed to work based on isolated details, details whose substance is no more than windblown dandelion seeds.


**Exercise at Retirement**

The importance of physical activity for maintaining health in the elderly has received minimal attention. Few studies have been published to document the benefits of exercise for older people, and the importance of physical activity in retirement has been all but ignored. Cunningham et al. investigated the effects of a 1-year physical activity program on cardiopulmonary fitness and health factors of men at retirement, randomly assigned to a control (n=111) or active (n=113) group and stratified on blue- or white-collar status. Pre- and posttest measures were taken on a variety of physiological and psychological measures: medical history, anthropometric measurements, electrocardio-

gram, forced expiratory volume, treadmill tests, fasting blood sample for cholesterol and high density lipoprotein determination, measurement of grip strength, and changes in leisure activity. The results indicated a significant change in VO_{2} max and minute ventilation in the active men compared to the controls. No significant changes were observed in maximal heart rate or respiratory exchange ratio. Additionally, no significant differences were found between groups in blood cholesterol and high density lipoprotein, although both activity and control groups had significantly higher values of HDL after 1 year of retirement. Although time spent in exercise sessions increased for the active group, it did not generalize to increased involvement in other vigorous leisure activities. The authors concluded that inevitable declines in maximal oxygen uptake can be delayed if regular physical activity is started even as late as the 70s.


**Does Exercise Prevent Disease?**

Initially the authors of this study justify the importance of exercise as a primary method of disease prevention. In recent years this method has proven to be more cost effective, with less risk than more established practices such as surgery and medication. Many clinicians are skeptical of the effectiveness of exercise, however, due to the difficulty of establishing and maintaining appropriate exercise behaviors among the different clinical populations under investi-
gation. To stimulate further study in this area, exercise application is briefly reviewed in relation to coronary heart disease, hypertension, diabetes, hyperlipidemia, and obesity. Also discussed are a variety of behavioral intervention procedures that have the potential of being effective in improving the exercise adherence of different clients across a variety of settings. Strategies presented are (a) modifying exercise antecedents such as environmental and personal factors, (b) evaluating exercise behaviors by establishing individualized intensity levels of exercise, and (c) manipulating the consequence of physical activity by delivering various forms of reinforcement following successful exercise participation. To date these behavioral interventions have enhanced short-term exercise adherence, but there is little empirical evidence that these behaviors can be generalized beyond the formal exercise program. It would appear that more controlled investigations are necessary in this area before exercise becomes an accepted practice in the prevention of disease.


Early Intervention for Infants With Down Syndrome

Reports claiming positive effects of early intervention programs for infants with Down syndrome are abundant in both lay and professional literature. However, these assertions are often not bolstered by valid and reliable research. Numerous confounding variables make many of these early intervention programs difficult to evaluate. After more than 20 years of research on early education, it is still difficult to find proven practices dealing with teaching/training methods for youngsters with Down syndrome. The purpose of this study was to present a comprehensive review of literature concerning early intervention with Down syndrome. Fourteen studies published between 1975 and 1985 were presented in annotated form. Each study is briefly critiqued and includes information about the subjects, test instruments, intervention programs, and the results. Topics of articles include immediate and long-term effects of early intervention, effects of parent participation in early training, acceleration of development, interdisciplinary early intervention, effects of neurodevelopmental training, vestibular stimulation, and parental reactions to early intervention. Since annotation was the major purpose, criticisms of each investigation are very minimal. Perhaps it would have been more useful in drawing conclusions from the review if a meta-analysis had been conducted.


Equal Access?

Have there been changes in the nature of the representation of minorities (i.e., American Indian, Asian, Hispanic, and Black) in special education classes since 1978? Data from the Office of Civil Rights and Elementary and Secondary School Civil Rights nationwide surveys affirm that representation of some minority groups continues to be disproportionately high in certain categories. The overrepresentation of blacks in TMR, EMR, and SED categories of exceptionality remains at twice
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the level than would be expected from the percentage of Blacks in the school population. American Indians were overrepresented in EMR classes, and Asians were underrepresented in all categories of exceptionality except for the gifted category. Data did show a decrease of Hispanics referred for services in classes for EMR students. Disproportionately low numbers of Blacks, Hispanics, and American Indians are placed in classes for gifted students, and that continues to be a source of concern. Sociological variables that may influence placement of ethnic minorities in special education were cited in this paper. Although physical educators are not directly involved with majority-minority representation in special education and regular education classes, as advocates for children we must begin to address this with the assessment and placement of students with handicaps. Until we resolve the issues of assessment and placement in physical education and ensure involvement of physical educators in IEP staffings, it behooves us to monitor these proceedings in special education.


Lumbar Lordosis, Pelvic Tilt, and Abdominal Muscle Performance

The interrelationship between pelvic tilt and lumbar lordosis has been an assumed biomechanical fact for years. It is also assumed that abdominal muscle function affects pelvic tilt and the lordotic curve. However, there are little data to establish these relationships upon which many exercise programs and rehabilitation protocols have been predicated. Walker et al. correlated measurements of lumbar lordosis, pelvic tilt, and abdominal muscle function, and also examined measurement reliability. Pelvic tilt, lumbar lordosis, and abdominal muscle function were measured in 31 healthy adults (20-33 years). All measurements were taken twice by the same researchers with a 1-min interval between measures. The correlation coefficients of these repeated measures were .84 for pelvic tilt, .90 for index of lordosis, and .71 for abdominal functions. Correlation coefficients of .18 and .06 were reported between the abdominal function test and pelvic tilt, and between the abdominal function test and the index of lordosis. A correlation coefficient of .32 was found between the index of lordosis and the pelvic tilt. These findings do challenge some established concept concerning factors influencing lordosis. The reliability measures reported were intratester indices. What about interrater measurements? Inquiry should be initiated to ascertain the generalizability of these results.


The Regular Education Initiative

The federal government and some education professionals have been calling for reform in how services are provided to mildly handicapped students. This initiative to revise the instructional program options for low-performing students is often referred to as the “regu-
lar education initiative.” The Executive Committee of the Teacher Education Division of the Council for Exceptional Children (CEC) examined the issues surrounding this initiative. A series of articles begins with a summary of the writings of four individuals and groups: a speech by Madeleine C. Will; two position papers by Margaret C. Wang, Maynard C. Reynolds, and Herbert J. Walbert; a joint statement by the National Coalition of Advocates for Students and the National Association of School Psychologists; and an article by M. Stephen Lilly. Each author had a unique emphasis but all shared two common themes. First, each criticized the categorical approach to education because it results in segregated “pull-out” programs that provide separate education services to children eligible for special education, migrant and bilingual education, and Chapter I programs. Second, each author recommended that the categorical programs and regular education programs be allowed to collectively combine resources to meet the individualized education needs of children. Most of the authors advocated experimental trials of noncategorical, integrated forms of education in several states and local school districts to better serve all students, particularly those who require more educational support. The regular education initiative promises to be controversial. This summary article and the CEC reaction papers that follow it may be of interest to those who serve children with disabilities.


Microcomputer-Mediated Teaching System

During the past two decades, individuals with severe motor impairment have benefited from technological advances pertaining to treatment approaches and their application to neuromotor/behavioral development. Now the personal computer has emerged as a major factor in therapeutic modalities. Among the questions addressed in this multiple-probe-across-behaviors design with two severe and multiple disabled youngsters were the following: Do basic motor skills improve as a result of direct training using a neuromotor/behavior approach? Does generalization occur? Is maintenance of skill evident after termination? Is microcomputer-mediated teaching a valid and reliable approach? The tasks included in the study consisted of sitting, pulling, kneeling, batting and 4-point positioning. These same tasks were probed during the baseline, experimental training, and maintenance sessions for both subjects, ages 17 and 24 months. The extensive microcomputer setup provided a basis for accurate and continuous data collection. The results indicated that both subjects did increase their frequency and duration of target behaviors in the training environment as well as in other environments (generalization). Maintenance was also attained with probes conducted 2 to 4 weeks after termination of training. The results seem to indicate a clear functional relationship between the target motor responses and the intervention procedures utilized. Further research is suggested to explore how to apply this process on more than a one-on-one setting, to other skills, and to other environments.


**RT of Mentally Handicapped**

This study examined reaction time of moderately and severely handicapped adults. The subjects reacted independently to both light and sound modalities of stimuli by moving the thumb for fine motor and the leg for gross motor reaction times; ordering was controlled and each subject received 15 trials for each condition (i.e., both fine and gross motor movements for each modality). The last 12 attempts for each condition were scored, therefore each subject has a minimum of 60 trials. Neither the two modalities nor the two motor responses were found to be significantly different. Since their results differed from the results of comparable research conducted with (a) nonhandicapped and (b) mildly and moderately mentally handicapped individuals, Kelly et al. concluded that this deviation might be due to CNS dysfunction (e.g., inability to isolate specific muscle groups) and/or lack of attentiveness in testing. They cited subject inattentiveness as a problem; although they did not indicate the type of variability they saw from trial to trial, it would likely be much larger than with nonhandicapped subjects. Reliably testing low-ability mentally retarded individuals presents unique challenges. For some parameters of measurement, different and/or shorter testing protocols must be implemented (the 40 minutes needed for some of their subjects is much too long). Although no differences were seen between the fine motor reaction time of the thumb and the gross motor reaction time of the leg, a design that controlled for the effect of brain proximity to the segment moved would be desirable if comparable research were to be taken.


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