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Utility of the implementation of programmatic systems to reduce and eliminate restraint use for the treatment of problem behaviors with individuals with mental retardation

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**UTILITY OF THE IMPLEMENTATION OF PROGRAMMATIC SYSTEMS TO
REDUCE AND ELIMINATE RESTRAINT USE FOR THE TREATMENT OF
PROBLEM BEHAVIORS WITH INDIVIDUALS WITH MENTAL
RETARDATION**

**A Dissertation
Submitted to the Graduate Faculty of the
Louisiana State University
and Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy
In
The Department of Psychology**

**By
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B.S. Pennsylvania State University, 1995
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ABSTRACT

Persons with mental retardation continue to remain one of society's most vulnerable groups as the number of individuals served increases and non-proportional resources are allotted to take of their needs. With results of national investigations indicating widespread indiscriminate abuse of restraints and overmedication to manage dangerous behaviors, federal mandates have been initiated to ensure ethical, safe and clinically sound use of these techniques. This study addressed the implementation of systemic changes that included a restraint education program and policy changes, careful monitoring and review of restraint and behavioral programming by oversight review bodies, and intense training of preventative and de-escalation techniques to all staff. A statistically and clinically significant reduction in restraints was evidences upon programmatic implementation during this 18-month study. Psychotropic medication use also decreased significantly as did polypharmacy use for persons with mental retardation. Results supported research noting that reduction of behavioral restraint does not result in an automatic increase in alternative highly restrictive management techniques. Further research is warranted to isolate specific elements of effective systemic change which weigh more heavily in the improvement of behavioral management for persons with mental retardation.

INTRODUCTION

Mental retardation is a disorder that has undergone much speculation and controversy amongst historians, scientists and providers. Definitions have grown from merely assessing intellectual functioning, to the incorporation of adaptive skill deficits (Goddard, 1928). In addition to understanding intellectual and adaptive deficits of individuals with developmental disabilities, continued assessment and treatment of dangerous behaviors is paramount in settings where these individuals are served.

Disruptive and dangerous behaviors such as self-injury, physical aggression and property destruction carry severe physical, social, educational, and economic consequences. Exhibition of such behaviors often foster negative attitudes in the community and with staff that work directly with them (Golden & Reese, 1996; Block & Rizzo, 1995). Maladaptive behaviors may cause severe injury to the individual himself, or jeopardize the safety of others and for that reason, many restrictive management techniques are utilized in the absence of effective behavioral programming.

The use of restraints was commonplace in most long-term facilities, with documented abuses (Health Care Financing Administration, Department of Health and Human Services, 1998). With increasing correlation between restraint use and negative outcomes, the 1987 Omnibus Budget Reconciliation Act (OBRA) was passed to reduce restraint use in long term facilities (Ejaz, Folmar, Kaufmann, Rose & Goldman, 1994). Arrested development, bone demineralization, loss of physical independence, injuries and ultimately death continue to be the result of inappropriate use of restraint.

In addition to use of restraint, documented abuse of psychotropic medication, including multiple medications to address the same symptoms have been in place even without experimentally sound research supporting its use. As a result, many suffer unnecessary sedation, chemical restraint, and the side effects which may be irreversible in some cases (tardive dyskinesia, dystonias, akathisia).

With national attention directed towards the horrific stories of vulnerable individuals being abused and neglected through inappropriate use of restraints (Weiss, Altimari, Blint & Megan, 1998), Protection and Advocacy groups saw an increase in reporting of injuries resulting from restraint and seclusion, ranging from bruises to death by asphyxia. The Interim Final Rule on Medicaid and Medicare Program's Hospital Conditions of Participation; Patients Rights (1999) provided guidelines to direct restraint use in hospitals and long term facilities receiving federal funding. This forced Intermediate Care Facilities for Mentally Retarded to re-evaluate their procedures for restraint education, monitoring of restraint, and documenting of its use. This study is an evaluation of a systemic shift with which the goal was to reduce unwarranted restraint use, and promote safe effective means of managing maladaptive behavior with the least restrictive methods possible.

REVIEW OF LITERATURE

MENTAL RETARDATION

Definitions and Classification

Attitudes towards individuals with mental retardation have changed considerably over the last two centuries. Due to lack of knowledge concerning this population, sentiments have wavered amid fearing, isolating, supporting and trying to protect persons with mental retardation (Ingalls, 1978; Mesibov, 1976). One of the earliest classifications proposed by Duncan and Millard (1986) focused on medical abnormality, disease and head injury as a means to classify as well an unscientific classification scheme, which was highly unreliable.

With the development of standardized tests in the 1900's, intellectual functioning became the basis of classification, with those with a mental age of 3 or less being labeled idiots, 3-7 imbeciles and those functioning up to 12 years morons (Sheerenberger, 1982). In 1961, the American Association of Mental Deficiency's definition of mental retardation was modified to include impairment in adaptive behaviors which addressed a person's ability to adapt to the social environment.

The most recent definition of mental retardation presented in the Diagnostic and Statistical Manual, Fourth Edition (DSM-IV, American Psychiatric association, 1994), states that a person so diagnosed must meet the following three criteria: (1) Significantly subaverage intellectual functioning; (2) adaptive functioning deficits and impairments; and (3) an onset before the age of 18 years.

Although much controversy ensued over the definition of mental retardation, the DSM-IV definition includes what is still held as the four accepted classification levels today. Mild (IQ scores of 50-55 to 70-75); Moderate (35-40 to 50-55); Sever (20-25 to 35-40); Profound (20-25

or below); and Severity Unspecified which is used when intelligence cannot be determined through testing, but the person clearly appears to meet criteria for subaverage intellectual functioning. The role of adaptive functioning continues to be hotly debated as it has not always been clear what adaptive skill deficits contribute most significantly to the diagnosis of mental retardation.

Assessment of Intellectual/Adaptive Functioning

Intellectual functioning is evaluated through use of a standardized intelligence test, the most reliable for determining level of mental retardation being the Stanford Binet L-M and Fourth Edition (Thorndike, Hagan & Sattler, 1986) and the Wechsler Scales (Wechsler, 1997). Adequacy of representation of individuals with mental retardation in the normalization of these tests brings the reliability of such measures into question.

The most familiar and most frequently used measure of adaptive function is the AAMR Adaptive Behavior Scales (Nihira, Foster, Shelhaas, & Leland, 1974) and the Vineland Adaptive Behavior Scales (Sparrow, Balla, Cichetti, 1984). Debate over classification of individuals by adaptive functioning in addition to intellectual functioning will continue as individuals with mental retardation are educated with the new developments of current research. Continued advances in identification have improved the services provided to individuals with developmental disabilities, and overall continue to enhance their quality of life.

MALADAPTIVE BEHAVIOR

Individuals with developmental disabilities require considerable resources to manage and treat dangerous and destructive behaviors (National Institute of Health, Consensus Development Panel on Destructive Behaviors in Persons with Developmental Disabilities, 1989). Severe problem behaviors such as self-injury (SIB), physical aggression, and property destruction often

result in continued social isolation (Golden & Reese, 1996), limited community job and educational opportunities, and reinforcement of negative attitudes about individuals with developmental disabilities (Block & Rizzo, 1995; Reiss & Benson, 1985). Exhibition of severe behaviors frequently result in more restrictive placements (Meador & Osborn, 1992; Ronsey, Blacher, & Haumeman, 1990; Bird, Sperry, Carreiro, 1998; Larkin, Hill, Haruber, Bruimins, and Hill, 1983) as well as subjection to more restrictive management strategies (Sherman, 1988).

Individuals with developmental disabilities often require lifelong support, and are highly dependent on public programs to finance their needs. The U.S. General Accounting Office reported that over \$13 billion has been allotted to care for individuals with mental retardation annually, second only to the elderly (GAO/HEHS-96-120, 1996). The National Institutes of Health, Consensus and Developmental Panel on Destructive Behaviors in Persons with Developmental Disabilities estimated that care for individuals with mental retardation who exhibit disruptive behavior exceeded \$3 billion in 1988.

From 1982 to 1997, the number of individuals receiving services in the Intermediate Care Facilities for the Mentally Retarded (ICF's/MR) decreased from approximately 141,000 to 129,000. However, overall expenditures continue to escalate. In 1993, approximately 82% of state facility residents were functioning in the severe to profound range of mental retardation.

Self-injury

Self-injurious behavior (SIB) is commonly described as self-inflicted behavior that usually causes or threatens tissue damage. It is typically repetitive, chronic in nature and in the absence of sensory impairment, likely to produce pain (Baumeister, Todd, & Sevin, 1993).

Although sometimes observed in normally developing individuals, SIB is reported to occur in about 4-14% of individuals with mental retardation, and is most frequently exhibited by severe to

profoundly mentally retarded individuals (Schroeder, Rojahn, & Oldenquist, 1989; Schroeder, 1991; Oliver, Murphy, & Corbett, 1987; Pace, Iwata, Edwards, & McCosh, 1986; Borthwick-Duffy, 1994) and 10-20% of persons in centers for the developmentally disabled (Matson, Bamburg, Mayville, Pinkston, Bielecki, Kuhn, Smalls, & Logan, 2000). Eye gouging, self-biting, head banging, and skin picking are a just a few of the disturbing behaviors that threaten the safety, freedom and quality of life of these individuals, due to the necessity to implement immediate crisis intervention to prevent further injury (National Institutes of Health, Consensus Development Panel on Destructive Behaviors in Persons with Developmental Disabilities, 1989; Johnson & Baumeister, 1978; Favell, McGimsey, Jones & Cannon, 1981).

Oliver, Murphy and Corbett (1987) found that 20% of individuals who engaged in self-injury did so to the point of tissue damage, and attempted to self-injure at least once every hour. Self-injury was noted as frequently managed through restrictive measures, for example use of straight-arm splints (Oliver et. al., 1998; Ball, Campbell & Barkemeyer, 1980), and restraint with helmets, and beds and chairs (Favell et. al., 1981). Self-injury remains one of the most commonly targeted behaviors for which physical restraint is implemented (Harris, 1996; Wallace et. al, 1999). Unfortunately, restraints often only prohibit SIB and are not therapeutic in that, when the restraints are removed, SIB can reoccur (Tate, 1972; Rojahn, Schroeder & Mulick, 1980). As a result, such interventions may reduce independent functioning and socialization with others (Meadow & Osborn, 1992, Rojahn et. al, 1980).

Pharmacological treatment of self-injury has included use of atypical antipsychotics and anxiolytics, mood stabilizers, antidepressants, beta-blockers and selective serotonin reuptake inhibitors (SSRI's). Studies detailing use of such medications have been significantly flawed in that most lack rigorous experimental design, are unreliable, and do not measure medication

effects on collateral behavior which suggests that caution should be exercised in attempting to generalize results claimed (Davanzo, Belin, Widaski & Brayn, 1998; Hammock, Schroeder & Levine, 1995).

In studies meeting experimental criteria, use of a beta-blocker, naltrexone, was found to be associated with a reduction in self-injury in cases where function of the behavior was considered to be nonsocial. Naltrexone use was supported by research that indicated that SIB might be caused by a pain-induced release of endogenous opioids, thus suppressing pain (Sandman, Baron & Colman, 1990). Continued research is required to address sound pharmacological treatment of self-injury. With limited rigorous research a functional assessment of behavior is minimally necessary for data based use of naltrexone.

Physical Aggression/Property Destruction

Physical aggression and property destruction are dangerous to staff and peers and may include behaviors such as punching, kicking, pinching, hair-pulling, throwing chairs, or tearing clothes (National Institutes of Health, Consensus Development Panel on Destructive Behaviors in Persons with Developmental Disabilities, 1989). Estimated prevalence of physical aggression and property destruction are at 22% and 15% respectively, amongst individuals with developmental disabilities. Incidents of aggression amongst individuals with developmental disabilities are highest in institutional settings, with group and private residential placements following close behind (Harris, 1996; Borthwick-Duffy, 1994). Although significantly less severe to the perpetrator, aggressive and destructive acts can cause grave injury to peers and staff targeted (Carmel & Hunt, 1989). Property destruction has been noted to lead to individuals being placed in less stimulating, austere environments. However, aggression remains the primary reason for treatment and institutional placement referral for individuals with

developmental disabilities (Meador & Osborn, 1992), as well as the leading reason for use of psychotropic medications (Baumeister, Todd & Sevin, 1993).

Given the high percentage of individuals with mental retardation receiving psychotropic medications to control aggression, the paucity of research is alarming (Horrigan & Barnhill, 1997; Kiernan, Reeves & Alborz, 1995; Hardan, Johnson, Johnson, & Hrecznyj, 1996). As with research on medication use for treatment of self-injury, many of these studies were also methodologically unsound. In addition, there were few in which an evaluation of collateral adaptive and social behaviors were investigated (Matson et. al, 2000). Some studies attempted to address increased scores on side effect measures, as well as an increase in conditions which adversely affected learning (Dent, 1995; Gedye, 1998).

Physical aggression and property destruction have major negative social and personal consequences for the individual who exhibits them. The presence of such challenging behavior remains the most significant factor influencing institutional placement (Bruninks, Hill & Morreau, 1988), presents difficulty in being selected for community living (Borthwick-Duffy, Eyman, & White, 1987; Eyman & Call, 1977), and re-institutionalization (Lakin, Hill, Hauber, Bruininks, & Heal, 1983). Physical aggression has been found to increase the likelihood of abuse from direct support staff (Rusch, Hall, & Griffin, 1986), and contributes to concerns with management in educational programs as well as termination from employment.

Improper attempts to manage aggressive acts may entail misuse of restraint, over medication and abusive treatment of individuals. Poor handling and increased use of unplanned restraint also leads to increased injury to the perpetrator as well as to staff attempting to manage such outbursts (Neufield, Libow, Foley, Dunbar, Cohen, & Breuer, 1999; Juades & Diamond, 1985; Hill & Spreat, 1987; Harris, 1996).

Due to the increased danger of injury to family, staff and other caretakers who may lack adequate education in behavioral management techniques, problem behaviors frequently result in physical and chemical restraint abuse (Health Care Financing Administration, Department of Health and Human Services, 1998; Miles, & Irvine, 1992). Although physical restraints can be a practical method of protecting others and the individual, prolonged use may have deleterious effects, not limited to disruption of daily programming (Favell et. al., 1981; Wallace, Iwata, Zhou & Goff, 1999). Growing concern about restraint use in hospitals and long term residential facilities continues to rise as providers attempt to balance consumer participation in health care decisions, provide least restrictive humane treatment, and support the consumer's rights.

BEST PRACTICES

All individuals who receive these services have the right to a therapeutic environment in which the most effective treatment procedures available are utilized and implemented by competent psychologists/behavior analysts. These individuals have the right to receive services that teach functional skills, and continued ongoing assessment and evaluation. Ultimately, a presiding emphasis on improved personal welfare is the central focus (Van Houten, Axelrod, Bailey, Favell, Foxx, Iwata, & Lovass, 1988; Burgdorf, 1980). In addition to receiving such services, the passing of several laws and policies of the Healthcare Financing Administration mandates that all such individuals be free from unnecessary physical/chemical restraints or seclusion. (Healthcare Financing Administration, Department of Health and Human Services. Medicare and Medicaid programs: Hospital Conditions of Participation, Patients' Rights, 1999).

Treatment and additional behavioral services provided are to be tailored specifically to the individual consumer's needs. Behavioral support is to occur within the context of multiple life domains of the consumer thus, planning should occur together with the interdisciplinary team

(IDT). This team consists of the consumer and those who know him or her best, including family and friends, and all major service providers (psychological and medical services, occupational therapy, physical therapy, speech therapy, social services, etc.) Planning often involves some overlap and contribution from these service providers in order to address the major goals to create a program that adequately addresses the individual's central issues.

In order to implement sound individualized behavioral support plans within the best practices guidelines, the assessment should include a functional assessment of challenging behavior exhibited to determine possible maintaining functions of those behaviors (Association for Behavior Analysis, Task Force on the Right to Effective Behavioral Treatment, 1988; Andorfer & Miltenberger, 1993). Without functional assessment, counter-therapeutic effects on targeted behavior may occur as a result of arbitrarily selected treatments (Solnik, Rincover & Peterson, 1977) and/or exposure to unnecessary aversive treatment procedures (Iwata et. al., 1994). Through assessment of the individual's environment, activities, and interactions with others, maintaining factors can be evaluated.

Indirect Functional Analysis

In a large service provider center such as the one used in this study, the functional assessment occurs indirectly through structured interviews, questionnaires, and rating scales. Commonly used for quick, cost effective and resourceful evaluation of behavior, the Questions About Behavior Function (QABF) may lead to quick investigation of factors possibly maintaining problematic behavior (Matson & Vollmer, 1995; Paclawskyj, Matson, Rush, Smalls, Vollmer, 2000; Applegate, Matson & Cherry, 1999). Other rating scales and interviews include the Functional Analysis Interview Form (FAIF) which is the only structured interview available

(O'Neill, Horner, Albin, Storey, Sprague, 1990), and the Functional Analysis Checklist(FAC) (Van Houten & Rolider, 1991).

Experimental Functional Analyses

As described by Iwata, Dorsey, Slifer, Bauman, and Richman, (1982), experimental functional analysis involves a rigorous structured experimental analysis of targeted behavior in manipulated conditions of social attention, escape from demands, automatic and tangible reinforcement. In what are typically 10-minute sessions, responses and exhibition of targeted behavior are analyzed using single case designs to investigate function of behavior. Such analysis has generally been identified as a highly effective procedure in the facilitation of treatment selection (Iwata et. al., 1994), although major drawbacks include but are not limited to requirements of extensive resources of time and expertise and increased risk to the individual and others.

Risk Analysis

Formulation of effective supports necessitate risk analysis to determine, if any, risk presented by exhibition of challenging behavior, proposed treatment interventions, and the constant evaluation and consideration of alternative interventions (Harris, 1996; Healthcare Financing Administration, Department of Health and Human Services. Medicare and Medicaid programs: Hospital Conditions of Participation, Patients' Rights, 1999). For example, experimental functional analysis may be ethically inappropriate in the assessment of severe and high intensity behaviors, as exposure to certain analogue conditions may increase frequency of behaviors and thus possible injury to self or others (Sturmey, 1995). In the context of the restraint and seclusion monitoring plan, it is clearly recognized that use of restrictive measures may result in both client and staff injury if not implemented correctly. Risk of injury associated

with restraint usage should be lower while minimizing, and hopefully eliminating targeted behaviors, however studies do not support this.

A majority of studies conducted on restraint use have focused on overuse in the growing elderly population in acute hospital settings. Restraint application rates increase to 18-20% for individuals 65 years old, and up to 22% for those 75 years old or older (Robbins, Boyko, Cooper, Lane & Jahnigan, 1987). Physical restraints have been justified as a means to protect individuals from injuries sustained from falls, to control agitated and confused patients and prevent the dislodging of medical devices. Although a large body of research evaluates fall rates with restraint reduction, there is little support that restraint application decreases falls; on the contrary, injuries due to falls and attempts to escape from restraints have been documented to result in increased severe injuries. Given that challenging behavior expose the individual, peers and staff to risk of harm, it is important to weigh additional risks posed in the application and removal of restraints.

Treatment

In the development of appropriate behavioral supports, several questions should be addressed including whether the individual's environment is safe, stimulating, stable and least restrictive. In order to protect the civil rights of individuals with developmental disabilities, a policy of least restrictive treatment has become the gold standard (Foxx, 1982). Least restrictive treatment occurs by a selection criteria in which least to most intrusive treatments are implemented. In the development of behavior support plans, individuals have to right to least restrictive/non intrusive techniques and, only after careful evaluation of the failure of these techniques to manage dangerous behaviors should more restrictive measures be taken (Foxx,

1982; Association for Behavior Analysis, Task Force on the Right to Effective Behavioral Treatment, 1988).

Restrictive procedures have been defined as those that are meant to prevent and manage severe behaviors and those which are ultimately intrusive beyond that of normal daily activity. Divided into general categorized levels of increased restrictiveness, such procedures are carefully regulated in sound behavioral planning. Mildly restrictive prevention and management techniques are those designed to suppress behavior with mild consequences, such as blocking in the event that an individual engages in self-injurious behavior. Such procedures have minimal effect on daily routines of the serviced individual. Behavioral interventions and control procedures become more restrictive when any form of personal, mechanical or chemical restraint becomes necessary, or seclusion and/or use of aversive stimuli. As intrusiveness of procedures increases, oversight, scrutiny and evaluations should become more stringent.

Highly restrictive behavioral control techniques are those implemented to manage behaviors that pose imminent danger to the individuals or others. Used only when prevention and management tactics, and replacement behavior training have been ineffective, these control techniques are not expected to produce lasting behavior change. Although carefully individualized, these procedures should be used as a last resort tool of management. Such techniques are highly intrusive and include presence of a contingent stimulus, which is unpleasant but not physically harmful in any way. Corporal punishment, forced exercise, seclusion, verbal abuse, or any procedure restricting shelter, drink or toileting are wholly prohibited.

Organized groups are appointed to evaluate the intrusiveness and necessity of these techniques. For example, the Behavior Intervention Committee (BIC) is one essential review

body that exists as an oversight board within most Intermediate Care Facilities for the Mentally Retarded (ICF/MR). It is composed of individuals qualified to make decisions regarding technical robustness of research supported treatment and the efficacy of its use in current individual behavioral support planning. The chairperson in most cases is a licensed/license eligible psychologist or behavior analyst, and the committee consists of the medical director, psychologist of record, social worker, direct care staff, etc. The provider should continually assess whether the individual is being taught functional skills to improve quality of life, and in the process decrease exhibition of problematic behavior. BIC ensures that the behavioral program adheres to federal and state policies.

Consent for implementation of treatment support should attempt to bridge the needs and personal decisions of the individual if clearly attainable, and conform to societal standards of safety and governing laws, which is not always easy. In order to obtain consent to the fullest degree possible, where the individual's rights and personal freedom is maintained, everyone who can assist in the decisions making processes that know the person best should be present (individual, advocate, family, staff and others.) This body of individuals is often referred to as the Human Rights Committee. Just as BIC would evaluate integrity of the behavioral plans, HRC ensures that the rights of the individual are maintained. In situations in which the individual has not given consent or is unable to do so, careful consideration should be given to ensure that the individual's rights and wishes are addressed by the legal guardian. Institutions or facilities are obligated to ensure safety by weighing rights of the individual and others, and through use of a peer review when the individual cannot give consent.

As the goal of behavioral support planning is to increase the skills of individuals, help them to achieve their goals (Association for Behavior Analysis, Task Force on the Right to

Effective Behavioral Treatment, 1988), and improve their overall quality of life, a range of empirically supported methods are frequently utilized. Use of nonrestrictive treatment strategies that have not been carefully evaluated to be helpful to individuals may often result in treatment failure and the implementation of more restrictive procedures (Foxy, 1982). Again, providers of support planning should be well versed in behavioral analysis and techniques of behavior treatment.

Included in the repertoire of techniques are non-contingent reinforcement, verbal prompts and feedback, interruption and redirection, fading, shaping, modeling, etc. In addition, all behavioral support planners should be well trained in the use of procedures such as forward and backwards chaining, differential reinforcement of other behavior (DRO), differential reinforcement of incompatible behavior (DRI), desensitization, extinction, etc. Specific strategies have also been implicated in the treatment of symptoms of psychiatric disorders, and providers should be familiar with these methods (i.e. systematic desensitization, cognitive behavioral treatment, anger management training, habit reversal, etc.) as decisions should always be data based and research driven.

In the treatment of targeted challenging behavior, replacement behavior treatments are designed to compete with the exhibition of problem behavior. Specifically, these replacement behaviors should be functionally equivalent to the challenging behavior and should thus be tied to sound functional assessment of the targeted behavior (Iwata et. al., 1994). It is important for the environment to be conducive to reinforcement of occurrences of appropriate behavior, and the individual should have access to naturally occurring reinforcers.

Psychopharmacological Treatment

Although found to be highly advantageous for individuals suffering from some psychiatric illness, psychotropic medications are often overused in the treatment of maladaptive behavior with very limited sound research documenting their effectiveness (Matson, Bamburg, Mayville, Pinkston, Bielecki, Kuhn, Smalls, Logan, 2000; Baumeister & Sevin, 1990; Pyles, Muniz, Cade, & Silva, 1997). Behavioral interventions have long been documented in the literature as effective in reducing and treating maladaptive behavior (Scotti, Evans, Meyer, & Walker, 1991), however, labor intensity, lack of resources and unwillingness to implement such strategies leave many institutions with pharmacological interventions as a first line of treatment. Aman & Singh (1993) reported that 50-66% of individuals with mental retardation in institutions were receiving psychotropic medications, while those in community settings were prescribed at rates ranging from 7-74%.

Medication has long been justified as the next treatment “in line” when less restrictive behavioral supports failed (Pyles et. al, 1997). Research indicates that prevalence of psychopathology in developmental delayed individuals is almost 5 to 6 times that of the general population (Matson & Sevin, 1988; Altmeyer, Locke, Griffin, Ricketts, Williams, Mason, and Stark, 1987). Of those receiving psychotropic medications in institutional settings, approximately 5.2% received psychotropic medications for a psychiatric condition (Hill, Balow, & Bruininks, 1985). Mulick, Hammer and Dura (1991) found that aggressive behavior continues to be the number one reason psychotropic medications are prescribed to individuals with developmental disabilities irregardless of Axis I diagnoses.

With prescription rates this high, it is problematic that so few methodologically sound studies have been conducted on psychotropic usage in the developmentally delayed population

(Matson et. al., 2000; Altmeyer et. al., 1987; Gadow & Poling, 1988; Baumeister & Sevin, 1990). More importantly, it has been documented that neuroleptics may cause irreversible side effects including involuntary uncontrollable movements. Motor side effects are the result of the medications effect on the extrapyramidal motor system of the brain, which include dystonias, akathisia, pseudo-Parkinsonism, and tardive dyskinesia.

Dystonias are present as muscle spasms, or muscle rigidity. Tardive dyskinesia is a side effect of long-term neuroleptic use consisting of repetitive movements of the jaw, lips, face, and trunk. Akathisia may resemble anxiety but presents with frequent pacing and general agitation/motor restlessness. Pseudo-Parkinsonism presents with shuffling gait, akinesia (muscle weakness), tremors, and rigidity as well. In addition to these motor side effects, other withdrawal effects have been studied. Careful monitoring of side effects, symptoms targeted for reduction and maladaptive behavior change is warranted.

Polypharmacy , where multiple psychotropic medications are given to manage the same symptoms occurs frequently in this population and should be avoided especially when medication are added without evaluation of and reduction of current ineffective medications (Aman, Hammer, & Rojahn, 1993; Werry, 1993). Medication which suppresses targeted behaviors as well as adaptive behaviors are not useful and are extremely restrictive (Matson, et. al., 2000). With no clear determination of treatment impact, such medication use may be better defined as chemical restraint.

Staff Training

Given that aggressive, disruptive and self injurious behaviors continue to lead to increased staff injuries, dismantling of family placements (Ronsey et. al., 1990), and higher admission rates in hospital settings, it is somewhat surprising that emphasis has just recently

shifted to staff training in the management of such behaviors (McDonnell, 1997; McDonnell and Sturme, 1993; Shore, Iwata, Vollmer, Lerman, & Zarcone, 1995). Evaluations of behavior management training programs are currently scarce (McDonnell, 1997; Shore et. al, 1995).

Prevention and management techniques should be employed to decrease the likelihood that problem behaviors are exhibited and are, in fact, manageable during crisis. Such strategies minimize stimulus conditions that may trigger behavior problems, and increase those that are competing and are socially appropriate. (Allen, McDonald, Dunn and Doyle, 1997). Following exhibition of maladaptive behavior, management techniques are implemented to quickly de-escalate these behaviors and prevent their duration and intensity.

Crisis intervention is the element of behavior support planning that addresses situations in which behavioral excess will most likely lead to physical harm to the individual or others, or cause property destruction. When nonrestrictive methods are ineffective in stopping dangerous behaviors, least to most restrictive implementation of procedures should always be used to intervene. When these crisis interventions involve use of restrictive measures, additional approval and documentation must occur if such procedures are unplanned. Restrictive procedures, which are planned, must also undergo a stringent approval process, continued evaluation, and risk analysis. Unplanned restraints must also undergo interim approval by both BIC and HRC.

In conjunction with direct behavioral support training, staff in many ICF/MR centers are required to demonstrate proficiency in the performance of crisis intervention and prevention techniques (Caraulia & Steigler, 1997; Allen & Tynan, 2000; Dattillo & Freeman, 1994). These programs any others like it have been implemented as a result of the recognized need for reactive planning as a component of the individualized plan. Several similar programs have been

developed nationwide to assist in crisis intervention. In the past, methods utilized to manage severe behavior involved the use of arm and body restraints/locks as well as pain inflicting methods to control and decrease behavior (Allen, McDonald, Dunn and Doyle, 1997), of which, many tactics were initially implemented in prison settings. Questions continued to be raised about the appropriateness and ethicality of this kind of restraint use in environments where client abuse is high (Marchetti & McCartney, 1990; Allen & Tynan, 2000). Additionally, one study raised questions as to whether staff were receiving sufficient training on techniques that are more frequently used, such as strategies to manage kicks and punches (Southcott, Howard, Collins, 2002).

In a survey conducted in 1998, results indicated that 74% of staff had one hour or less of education regarding restraint usage, with only 26% receiving three or more hours in restraint training (University of Texas MD Anderson Cancer Center Restraints Improvement Group, 1999). Much uncertainty regarding restraints continues to cloud proper use and attitudes of those who implement them. Under the 1999 CMS guidelines, certified ICF/MR facilities are required to ensure appropriate restraint training (Healthcare Financing Administration, Department of Health and Human Services. Medicare and Medicaid programs: Hospital Conditions of Participation, Patients' Rights, 1999).

Such prevention techniques programs are specifically designed to emphasize proactive strategies for preventing severe problematic behavior. In so doing, a minimal force, least intrusive structure was implemented which moved from defusing and distraction techniques to those involving increased control methods (Allen et. al., 1997).

Components of the prevention and management training modules include modules in both theory and application. A brief overview of aggression, environmental engineering tactics

that target setting “triggers” that may produce disruptive behavior, instruction on safe responding to early signs of agitation through use of diffusion and distraction, safe response to severe incidents that may warrant self-defense or minimal restraint. Finally, sensitivity training was taught to provide emotional support to clients and staff in the event of any exhibition of challenging behavior (Allen et. al., 1997; Caraulia & Steigler, 1997).

Results of implementation of such programs have shown clear declines in percentages of severe behavioral incidents, staff injuries and need for restraint (physical and chemical) (McDonnell, 1997; Allen et. al., 1997; Caraulia & Steigler, 1997; Allen & Tynan, 2000; Dattillo & Freeman, 1994). Research also noted that although risk of injury was no different for staff trained in aggression control procedures and untrained staff, those who received training were involved in fewer violent episodes (Infantio & Musingo, 1985).

It has been shown that individuals’ disruptive and inappropriate behaviors may have damaging effects on staff attitudes and decrease staff training consistency, (Shore et. al, 1995), and for this reason, training modules that improve staff effectiveness and overall attitudes towards those in their care are essential. In hopes of helping to develop positive relationships between caregiver and individuals known to exhibit disruptive behavior, Crisis intervention programs seek to reinforce carer’s beliefs that they are empowered to effectively handle such situations. One study also showed that staff self confidence also increased as a result of learning and properly executing techniques acquired in such training courses (McDonnell, 1997; Southcott, et. al, 2002). It is believed that while preventative management programs are no replacement for long-term behavioral intervention, they may decrease hesitation, fear, and overuse of more restrictive methods to manage disruptive behavior.

As part of the training received, staff are required to demonstrate competency in safe application of physical holds, recognition of signs of physical distress during any form of restraint, and ultimately, the ability to perform procedures that prevent, de-escalate and manage an individual when antecedents indicate possible display of more dangerous behaviors.

Treatment Evaluation

Behavior support plans are evaluated for effectiveness by monitoring decrease in targeted problem behavior, as well as documented increase in appropriate adaptive replacement behavior. Well-constructed graphs, which show these trends, tend to be most efficient in communicating the benefits of the plan. The behavioral support plan should be revised as clinically indicated by the licensed psychologist or designated support provider supervised by such. BIC is the forum in which all restrictive plans are to be reviewed, with the input of all necessary IDT members.

RESTRAINTS

Psychiatric Settings

Over the last 150 years, restraint use has evolved from what was considered inhumane to what is now more heavily scrutinized and monitored in the provision of therapeutic services (Evans & Strumpf, 1989). In 1793, Pinel, challenged the poor treatment of mentally ill individuals, leading the way by removing chains from institutionalized mentally ill inmates (Grob, 1966). Despite his and others work, a review of facilities serving mentally retarded and ill individuals still indicated wide psychological and physical abuse, not excluding being housed in cramped damp cells, clothed in rags, and shackled to walls (Evans & Strumpf, 1989; Miles & Irvine, 1992; Schieb, Protas, & Hasson, 1996).

Notwithstanding such attempts in other countries, it was not until Dorothy Dix campaigned for the building of mental hospitals in the 19th century that treatment of the mentally

ill was addressed in the states. Even at the advent of such hospitals, care remained custodial and protective as opposed to therapeutic. Use of chains, fetters, straight waistcoats (straight jackets), restraints and seclusion were heavily utilized as the management strategy at the end of the 19th century. One such invention was the tranquilizer chair, in which disruptive individuals were strapped from head to foot.

At the turn of the 20th century, the medical model of service provision held physical treatment of mentally illness as the gold standard. Psychosurgery, electro-convulsive therapy and sedation were popular treatments, with psychopharmacology serving as the first line of mental illness treatment by the mid 20th century (Fitzgerald & Long, 1973). Towards the end of the 20th century, restraint and seclusion use came under more public scrutiny. Patient advocacy groups and civil rights groups protested restriction of personal liberty and rights to least restrictive treatment. State and federal court decisions since the 70's have sought to limit the use of seclusion and restraint to emergency situations only, however, review and monitoring have revealed many tragedies due to improperly utilized restraint.

It has only been within the last 40 years that research has focused on the treatment of mentally ill individuals. Studies targeted restraint and seclusion outside of the United States, more specifically addressing seclusion/restraint rates, reason for use, demographic information for individuals for whom restraints/seclusion was required, least restrictive alternatives, and educational programs for restraint/seclusion reduction.

Outside of the U.S., studies of restraint/seclusion use in psychiatric facilities were conducted in Canada, Wales, Poland, Taiwan, England, Australia, and Israel. Research in Canada focused on use of mechanical restraints to manage violent behaviors, where staff were training to use de-escalation “talking down” and self-defense procedures (Girguis & Durost,

1978). Several of the restraint studies outside of the United States attempted to address factors which contributed to restraint/seclusion use. Patient status, rates of staffing, attitudes and perceptions of patients, nurses and staff, and safety of the individual as well as staff were just a few dimensions studied. Lack of sufficient manpower and staffing was a common thread in many studies which contributed to increased restraint/seclusion use (Yang & Ghung, 1996; Muir, Chochrane & Harrison, 1996; Morrison, 1990).

Many studies have attempted to identify demographic characteristics, which may correlate with restraint use. Of factors such as race, age, gender, age was found to have significant correlation to restraint use (Way & Banks, 1990; Binder, 1979; Gerlock & Solomons, 1983). Way and Banks (1990), found that seclusion was more likely to occur for young, female mentally retarded individuals.

History of violence, violence against staff, noncompliance and disruption (Sheridan, Herrion, Robinson, & Barter, 1990), agitation (Betemps, Somazo, & Buncher, 1993), and threats of violence were all found to be antecedents to restraint/seclusion use. Due to the variance in setting, method of data collection and guidelines for practice, comparative investigation of such studies has not been possible.

Acute/ Long Term Care Settings

Research since 1980 report increased restraint use in hospitals in the United States, especially for those 65 and older (Minnick, Mion, Leipzig, Lamb & Palmer, 1998; Robbins, Boyko, Lane, Cooper, Jahnigen, 1987; Thomas, Redfern, & Reese, 1995) and has addressed issues including physical layout of facility, prevention of therapy disruption, restraints as a low cost substitute to observation, and an increasingly older population with co-morbidity. Continued

reduction of restraint use in long-term facilities mandates more attention be given to its use in acute care facilities as well, especially with the growing elderly population.

Restraint use outside of the United States in acute care settings varied greatly. Restraint in Scotland, Sweden, Denmark, and England was found to be much lower than in the United States despite comparable age, acuity and staffing levels (O'Keefe, Jack, & Lye, 1996; Ljunngren, Philiips & Sigadari, 1997). Although age and acuity was found to be lower in Canada, their restraint use was still more frequently utilized.

In the 19th century, restraint in acute care settings in the United States was utilized as a therapeutically sound management technique to prevent accidents and life-threatening injuries. Early nursing journals indicated some ambivalence towards restraint use, questioning their safe implementation (Strumpf & Tomes, 1993). However, increased restraint use by nurses and physicians has been documented in the United States. One study estimated that over half a million older individuals were restrained daily.

Recent studies of the characteristics of individuals restrained in acute care facilities indicates that as the individual age increases, the likelihood that restraints will be used during their stay also rises (Robbins et. al., 1987). Risk of falls, wandering, confusion, agitation and overall disruptive behavior are the most frequently cited reasons for restraint application.

In 1998, a 50-state survey was conducted and reported in a five part series by the Hartford Courant newspaper in which 142 deaths were confirmed to have occurred during or after restraint or seclusion. Representing the first of its kind, this investigation of mental retardation and mental health facilities as well as group homes nationwide yielded figures of abuse, neglect and death that were interpreted to be much lower than actual numbers given the amount of underreporting of incidents. The horrendous findings of this investigation sparked

outrage across the nation. In an eleven-month period, twenty-three individuals died at the hands of staff implementing improper restraint and or seclusion techniques.

In 125 of the confirmed deaths, 33% died of asphyxia, and 26% died of cardiac related issues (Weiss, Altimari, Blint, Megan, 1998). In restraint asphyxia, respiration is compromised causing insufficient oxygen, which results in cardiac arrhythmia (Patterson, Leadbetter, & McCornish, 1998; O'Halloran, & Frank, 2000). Prone restraint, a hazardous and potentially lethal restraint position in which an individual is placed facedown during the hold (Figure 1.) has been linked to many restraint injuries and deaths. Of the 142 deaths, 23, died after use of prone positioned floor holds, and 20 died after being bound with leather wrist and ankle cuffs or vests for hours without supervision. In 114 of the cases, 26% of the deaths were children 17 and under, which is surprising as federal statistics note that children make up less than 15% of the population in both psychiatric and mental retardation facilities (Weiss et. al, 1998).



Figure 1. Improper restraint technique. These types of prone holding restraints are especially dangerous as chest expansion is limited making breathing more difficult.

Basket holds are another type of physical restraint in which death by asphyxiation has been documented. In this procedure staff grabs the individual by both wrists or forearms, crosses them in front of his stomach/chest, and holds them from behind. Difficulty managing an individual in this position often leads to the wrists being held more tightly or the person being bent forward into a position which makes breathing more difficult (Boyle, 1999). Prolonged struggle (O'Halloran & Frank, 2000; Paterson et. al., 1998), mania, respiratory problems, pre-existing heart disease (Stratton, Rogers, Brickett, Grunzinski, 2001), and obesity may all contribute significantly to the lethality of positional restraint.

Although no causal relationship has been established between use of certain psychotropic medications and sudden deaths (Kumar, 1997; Morrison & Sadler, 2001), the association has been established. Changes in the electrocardiogram (EKG) have been noted to occur when medications such as lithium carbonate, and antipsychotic medications are utilized, as well as central nervous system depression (Mohr & Mohr, 2000). Interactions of restraint and current psychotropic medication can be risky, the introduction of chemical restraint in addition, typically antipsychotics and anxiolytics can be lethal (Mohr & Mohr, 2000; Weiss, 1998).

During 1998 alone, Protection and Advocacy groups received about 1000 complaints and documented many bruises and broken bones resulting from restraint and seclusion (The United States General Accounting Office/HEHS-99-196). Under new regulations, the Center for Medicare and Medicaid (CMS), formally known as the Healthcare Financing Administration (HCFA), is now turning over reports of restraint related deaths occurring in hospitals nationwide. Current legislation requires that all healthcare providers that benefit from Medicaid or Medicare to report all restraint related injuries and deaths for investigation (P & A Special Report, 2000).

The Joint Commission for Accreditation of Healthcare Organizations (JCAHO) has implemented the mandatory reporting of “sentinel” events for investigation. These incidents are defined as an unexpected occurrence involving death or serious physical or psychological injury, or activity which, if repeated, would have damaging effects on an individual.

Due to fragmentary reporting, exact numbers or even close estimates of death and injury remain unknown in Intermediate Care Facilities for the Mentally Retarded (ICF/MR’s). Although P&A’s are responsible for protection of the state’s mentally ill, only a small percentage actually receive systematic reporting of deaths, injuries or abuses in their state facilities (GAO/HEHS-99-176). Unfortunately, strong codes of silence among direct care staff still exist, which also makes it very difficult to obtain information during investigations even once initial reports are made (GAO/HEHS-99-176).

Federal Medicare and federal/state Medicaid programs account for approximately 40 % of the financial support for mental health treatment facilities. In addition to coverage for various groups, Medicare also covers adults and children with mental retardation. In 1996, 9.6 billion dollars were spent for ICF/MR facilities. Waivers also allow for coverage of mentally retarded individuals who require services in less restrictive settings. Overall, regulatory protection and reporting has been found to reduce use of restraint and seclusion while improving safety for residents as well as for staff who care for these individuals.

Through the training of staff to implement the restraint and seclusion policy, several concrete goals are purposefully addressed. These include: insuring the rights of the consumer, clearly establishing limitations on restraint use, and the prohibition of seclusion. Development and implementation of programmatic restraints has been shown effective in reversing escalating trend of restraint use (Donat, 1998). Given that improper use and misuse of restraints has been

responsible for at least one death, if not many more, of every 1000 nursing home deaths (Miles & Irvine, 1992; The Hartford Courant, 1998), appropriate training seeks to enforce adherence to guidelines for the development, implementation and evaluation of behavior support services, and help find ways to alter conditions resulting in restraint use.

Physical restraints have often been imposed as a coercive means to gain compliance, a means to punish and penalize individual's behavior, or exercise environmental control. This has occurred in the absence of appropriate and necessary resources such as adequate staffing ratios, which is in direct opposition of the CMS guidelines on restraint use. The Interim Final Rule on Medicaid and Medicare Program's Hospital Conditions of Participation; Patient Rights (1999) states that hospitals must ensure that all individuals are not subject to seclusion or restraint for behavior management unless clinically indicated, and are never to be utilized as a means of coercion, convenience or retaliation. Training should include clear direction on the criteria for restraint documentation, and efforts necessary to improve and systemically eliminate unnecessary restraint in ICF/MR facilities.

Direct care staff share heavy responsibility in the implementation of behavior interventions. Many developmental centers and facilities have poor staff client ratios (1:5- 1:8). In the Hartford Courant investigation, it was discovered that of 26 of the deaths 6 occurred during use of restraint implemented by only one or two people who were doing the work of what should have been four staff members. As quoted by one nurse at Western State Hospital in Virginia, "Every time we've had a downsizing of staff we've had an increase in restraints and seclusion's. When you have more staff you can intercede better and you don't have to just place someone in restraints to calm them down." Given fiscal constraint, staffing and training have been hit hardest. The American Psychiatric Association recommends at least one person per

limb and another individual to observe any implementation of physical restraint (Megan & Blint, 1998). Many observations indicate that this is rarely the case, as noted in the Hartford Courant investigations.

Not surprising, behavior support plans may be ineffective within these parameters, regardless of whether restraints are planned. Inadequate training and implementation of the behavior support plan may lead to increased emergency restraint usage. Failure may be attributed to several factors including poorly trained staff, poor data collection and evaluation procedures, less than adequate review, oversight and ultimately, limited resources.

In the management of problem behavior several forms of control are often utilized. Social, institutional and physical control are employed. Social elements may involve expression of disapproval and/or threatened consequences (Harris, 1996), whereas, institutional control involves regulation of where one eats and sleeps, ultimately restricting access to certain community or residential facilities.

Inappropriate use of restraint and seclusion has been documented to cause arrested motor development secondary to disuse of limbs, bone demineralization, and shortening of tendons, loss of physical independence, decrease in respiratory efficiency, loss of cardiovascular tone (Lovass & Simmons, 1969; Mion et. al, 1989; Robbins et. al, 1987; Morse & Hutchion, 1991; Terpstra, Terpstra & Elaine, 1998), injuries and deaths (Fisher, Piazza, Bowman, Hanley, & Adelinis, 1997; Favell, McGimsey, Jones, & Cannon, 1981). Precaution should be taken when restraints are utilized with individuals taking certain medications. It has been accepted by clinicians that adrenaline released during the agitation and struggle that may ensue during restraint may react with current medications to cause fatal cardiac arrest (The United States General Accounting Office, HEHS). Restraint of physical movement may also interfere with the

accomplishment of daily training goals, and decrease social interaction between client and caretaker, while providing an effortless prevention of dangerous behaviors (Rojahn, Schroeder & Mulick, 1980).

Physical Restraints

Much debate has and continues to surround the way physical restraints have been defined. Much of the restraint literature focuses on the protection and safety in elderly populations in hospital settings. As documentation of injuries due to improper restraint use and abuse increases, necessity for reduction is supported. Little research cites clinical benefits of continued restraint use.

Generally, physical restraints are categorized into personal (manual) and mechanical restraint. Personal restraint is commonly defined as that involving direct application of force/pressure to another to suppress movement. Moving an individual's head to midline, applying pressure to a person's back to prevent rocking (Reid, Tombaugh & Vanden Heuvel, 1981; Paterson, Leadbetter, & McCornish, 1998), and moving an individual's hands to his sides or implementation of a baskethold (Matson & Keyes, 1988; Weiss, 1998) are examples of personal restraint.

Mechanical restraints such as wrist weights, helmets, mittens, masks, and adaptive clothing (i.e. camisoles or vests) used to prevent, manage and control self-injury or aggressive behaviors are often also labeled as "protective equipment" in some settings (Dorsey et. al., 1982; Rojahn et. al., 1980; Fisher et. al., 1997; Dorsey, Iwata, Reid, & Davis, 1982). CMS guidelines differentiates restraint devices used for behavioral management from those used to promote healing and facilitate medication treatment. Terms such as medical immobilization and protective devices have been used to label restraints used solely to ensure that medical treatment

is not compromised (Healthcare Financing Administration, Department of Health and Human Services. Medicare and Medicaid programs: Hospital Conditions of Participation, Patients' Rights, 1999) and were not included in this systems analysis.

Mechanical restraints involve the application of any physical device to the body of an individual to suppress movement and normal access to the body (Healthcare Financing Administration, Department of Health and Human Services. Medicare and Medicaid programs: Hospital Conditions of Participation, Patients' Rights, 1999). Additional restraint devices that have blurred justification for usage include lap trays, chair positioning that prevent the individual from rising, and bed rails.

Bed rails in particular, have received much recent attention due to the fact that they are often deemed protective in nature (preventing individual from falling). Healthcare workers are often trained to automatically raise rails in institutional settings as a means of maintaining safety for the individual. The Food and Drug Administration issued a Safety Alert in 1995 warning of dangers of injury and death due to entrapment in bed rails (Food and Drug Administration: US Department of Health and Human Services, 1995). Reports indicated several incidents of injuries sustained when individuals attempted to climb over rails, or became wedged between the bar spaces.

In a review of available literature on restraint use with mentally retarded individuals, Harris (1996) focused on the treatment outcome and efficacy of treatments utilizing restraints. Thirty-two studies were reviewed in which 73 mentally retarded persons underwent some form of physical restraint. Of the single subject studies, self-injury was the most frequently targeted behavior for which physical restraints were employed; additionally, aggression and property destruction were heavily cited. Although extensive research exists that investigates protective

equipment use for individuals who self injure, little is understood about use of restraints for management of other aberrant behaviors (Harris, 1996).

In accordance with the CMS psychiatric guidelines and the state restraint policy, physical restraints do not include use of bedrails, protective nets, helmets, braces, wheelchairs or any appliance used for protective, orthopedic or postural support. Physical restraint has been interpreted to be any action or procedure that limits, suppresses and prevents movement that does not occur voluntarily, regardless of the time duration of the movement suppression (Harris, 1996; Healthcare Financing Administration, Department of Health and Human Services. Medicare and Medicaid programs: Hospital Conditions of Participation, Patients' Rights, 1999). Variance still exists on defining physical restraint in terms of duration applied. For some facilities, a two-minute rule, where any physical pressure/force or device used to restrict movement for less than two minutes is not considered restraint. Literature indicates that physical restraint duration usually ranges from 3 seconds (Barton, Repp, & Brulle, 1985) to 15 minutes (Matson & Keyes, 1988).

Physical restraint should be clearly distinguished from daily treatment procedures such as blocking, and physical guidance. Some argue that in making these distinctions, one must evaluate selective/partial restraint that controls a subset of behavior while all other behaviors are free to occur. Blocking and physical prompts have been defined as examples of partial restraint as they limit aggressive and self-injurious behaviors but permit a wide range of movement. However, as blocking is relatively non-intrusive in nature, it is most commonly excluded from restraint definitions, as is redirection. The latter consists of physical guidance to prevent the occurrence of maladaptive behavior.

Chemical Restraint

Any drug that is administered to control behavior by restricting function or movement by an individual is defined as chemical restraint (Healthcare Financing Administration, Department of Health and Human Services. Medicare and Medicaid programs: Hospital Conditions of Participation, Patients' Rights, 1999). Psychotropic medication should only be administered when there is sound research support for its use in the treatment of behavioral symptoms; long-term use without such indication or evidence of effectiveness constitutes chemical restraint as well. Any medication administered to induce a state that helps an individual tolerate a potentially painful or unpleasant procedure without compromising cardio-respiratory function is not considered chemical restraint.

Emergency versus Programmatic Restraints

When personal, mechanical or chemical restraints are applied at short notice in the absence of carefully outlined procedures, it is defined as an unplanned or emergency restraint (Harris, 1996). Research notes that unplanned emergency restraints result in higher rates of injury (Miles, 1992; Tinetti, Lie, & Ginter, 1992), are less functionally linked to long term reduction of targeted behavior often resulting in the continuation of intrusive and restrictive means of behavior control in crisis. Without adequate training of restraint methods, the likelihood of abuse and neglect may rise. Evidence supports that fewer staff and client injuries are sustained when mechanical physical restraints are planned (Spreat et. al., 1986), however, the ease of their implementation may lead to restraint overuse for individuals they are suppose to protect.

PRN restraint orders, or those initiated on an "as needed" basis were commonplace in many psychiatric facilities and hospital settings. In many cases, it has been the first response in

emergency situations in which an individual has become dangerous and difficult to manage. More often than not, the PRN chemical restraint would occur in the form of an involuntary injection of an antipsychotic or neuroleptic medication meant to sedate and contain an uncontrollable individual. In the context of the CMS guidelines under which all facilities receiving Medicaid and Medicare are bound for funding, PRN's are strictly prohibited. Such restraints are not to be confused with emergency restraints in which each restraint use must receive authorization by a physician/licensed psychologist (stat medications). The standing order for any form of restraint is prohibited as such orders would allow for indiscriminate seclusion and restraint use.

Programmatic or planned restraints are those that are applied as part of an approved procedural plan, detailing type (personal, mechanical, and chemical), whether contingently or non-contingently applied, duration and process of monitoring. Reduction of overall restraints is optimal, however, if restraints are required, careful evaluation, planning and training of staff reduces number of injuries associated with such procedures.

Planned Non-Contingent/Contingent Restraints

Restraints are also defined in terms of how they are applied. Use of continuous/non-contingent restraint applied independently of an individual's behaviors versus restraint use for a specific behavioral occurrence is a top concern procedurally. The use of restraints applied continuously versus those applied contingently for targeted behavior is extensively covered in the literature today. Evaluation of the positive results of non-contingent restraint is, however, bleak. Many studies that have evaluated non-contingent use of restraint have addressed protective equipment or mechanical restraint to reduce and eliminate self-injurious behavior. As expected, non-contingent mechanical restraints applied to reduce self-injury led to marked

reduction in the exhibition of such behavior (Harris, 1996), however, unless systematically faded, effect sometimes lasted only while the individual remained restrained (Pace et. al., 1986). Restraint fading is one method considered highly effective in reducing the negative side effects associated with non-contingent restraint usage such as immobilization, social unacceptability, and inadvertent reinforcement of targeted behavior (Fisher et. al., 1997; Rojahn, Schroeder & Mulick, 1980).

Positive effects have been found in recent studies, when non-contingent restraint devices are carefully evaluated and selected. Van Houten (1993) found a reduction of face slapping with the application of wrist weights, with no negative effects on toy interaction. Dorsey, Iwata, Reid & Davis (1982) assessed non-contingent use of a football helmet and gloves and contingent use of the same protective devices to reduce self-injury. Results supported the hypothesis that continuous restraint was effective in reducing self-injurious behavior. When the protective equipment was then contingently applied, low rates of self-injurious behavior were maintained, and restraint duration declined.

Due to lack of staffing resources, indiscriminate use of non-contingent may be attractive to staff given the ease in preventing challenging behavior, however this violates federal guidelines (Healthcare Financing Administration, Department of Health and Human Services. Medicare and Medicaid Programs: Hospital Conditions of Participation, Patients' Rights, 1999). Risk of injury must be evaluated against adverse developmental consequences of prolonged restraint usage (Terpstra et. al, 1998; Rojahn et. al., 1980). Studies yielded results that contingently applied physical restraints used to suppress movement may serve as a form of time out procedure (Harris, 1996). In these cases, physical restraint then clearly becomes a response cost reduction procedure implemented upon the exhibition of targeted behavior.

Hypotheses of Restraint Effectiveness

As there are many theories as to why restraints (contingent and non-contingent) reduce challenging behavior (Harris, 1996), it is important to evaluate interaction between existing environmental and restraint contingencies (Iwata, Pace, Lalsher, Cowdery, & Cataldo, 1990; Favell, McGimsey, Jones, & Cannon, 1981).

Several factors have been proposed and investigated to explain the effectiveness of restraints on the reduction of maladaptive behavior.

1. Restraint is an aversive experience. Research notes that global, more intrusive forms of movement suppression are more effective than less intrusive restraints in reducing aberrant behavior (Rolider & Van Houten, 1985).
2. Restraint functions as a time out. Behavioral problems are expected to decline as a result of the individual having decreased access to positive reinforcement (Dorsey et. al, 1982).
3. Restraint functions as an escape from an aversive environment/task. In the presence of demanding, confusing or unpleasant stimuli, noncontingent restraint would act as a safe haven, whereas contingent restraint would be likely to create increased exhibition of targeted behavior (Dorsey et. al., 1982).
4. Restraints result in increased attention from staff and increased physical comfort (Favell, McGinsley, Jones, & Cannon, 1981).
5. Restraints interrupt a chain of aberrant behavior (Bitgood et. al, 1982).
6. Restraints acquire stimulus control for appropriate or nonmaladaptive behaviors. Restraints serve as a safety signal for the absence of aberrant behavior, end to aversive situation or environment, etc.

7. Restraints reinforced through escape from negative encounters with clients. Given that restraints prevent exhibition of challenging behavior (Van Houten, 1993), it is more likely that contingent restraint and the duration of noncontingent restraint would increase.

Seclusion

Usually defined as a procedure in which an individual is confined to a specified area for a given period of time, state to state definitions may vary widely. Several “time out” procedures are sometimes loosely defined as seclusion. These include: (1) placing an individual in a locked room; (2) placing an individual in a room with the door held shut; (3) separating an individual from the group although remaining in the same general location as their peers. As per the state restraint policy, seclusion as defined as involuntary confinement of an individual alone in a room from which he/she is prevented from leaving is strictly prohibited, thus not addressed in this study.

RATIONALE FOR THE STUDY

Individuals with mental retardation continue to be some of the country's most vulnerable citizens. With an estimated 120,000 individuals living in intermediate care facilities, there is rising concern over reports of the increased risk of improper restraint and seclusion practices. Most agree that when an individual engages in maladaptive behavior that puts themselves and others at risk for harm, staff may, as an option in an emergency, restrain to protect. However, use of restraints to control maladaptive behavior with persons with mental retardation continues to be controversial. Viewed negatively by some, restraint has been documented to result in client and staff injury (Hill & Spreat, 1987), and physical complications and death (Weiss, 1998). However, with no viable less dangerous procedures for some cases, restraint continues to be one choice management technique.

In some cases, planned restraints were successful after behavioral and pharmacological interventions were ineffective (Neufield & Fantuzzo, 1984, VanHouten & Rolider, 1984). Sturmey (1999) stressed the lack of understanding regarding restraint effectiveness and use even though restraint reduction has been documented. Restraint that has been carefully incorporated into treatment programs has been found to be safer for individuals than restraint applied in emergency situations (Spreat, Lipinski, Hill & Halpin, 1986). Harris (1996) found that emergency restraints are often used more frequently and for longer durations than planned restraint. Planned implementation of restraint is less dangerous to both consumers and caregivers, and continued reduction of problem behaviors warranting restraint has been demonstrated through systematic restraint fading (Fisher, Piazza, Bowman, Hanley, & Adelinis, 1997, Oliver, Hall, Hales, Murphy, & Watts, 1998).

Local, state and federal regulations have mandated effort be exerted to reduce and/or eliminate restraint use (Healthcare Financing Administration, Department of Health and Human Services. Medicare and Medicaid programs: Hospital Conditions of Participation, Patients' Rights, 1999); nonetheless, physical and chemical restraint continue to be employed to manage aberrant behavior. As physical and chemical restraint continue to be the most restrictive of all management techniques, rigorous oversight of its use is necessary to prevent rampant unwarranted implementation for staff convenience or punitive purposes. In attempts to systematically increase safety while reducing restraint use, program administrators, advocates, clinicians and those representing health workers emphasize the importance of staff training (GAO-HEHS, 2000).

The purpose of this study was to show the impact that the implementation of programmatic system changes had on the restraint use to control behavior excesses within a residential setting. Training included teaching staff to safely place and remove an individual from restraint, to intervene by using crisis intervention techniques to de-escalate behavior, and training on preventative techniques. By training staff to implement programmatic changes, we hoped to demonstrate a decrease in overall restraint use, with a hypothesized reduction of emergency and ineffective planned restraint. As an auxiliary measure of program effectiveness, use of psychotropic medications was also monitored to ascertain whether any perceived program success was due to an increase in pharmacological treatment.

Although a complete elimination of restraint use would be optimal, it was most important to train staff to seek out less restrictive management procedures through identification of behavioral function, to correctly implement and document restraint use, as well as to continue to implement sound behavioral programming.

METHOD

PARTICIPANTS

Participants included 316 individuals of a residential facility in southwest Louisiana with developmental disability. Functioning level percentages were as follows: 2 % mild, 3% moderate, 5% severe, 90 % profound with 0% classified in the unspecified functioning level as determined by standardized intellectual tests and assessment of adaptive skills.

Table 1. Demographic Characteristics of Participants

<u>Demographic</u>	<u>Percentage</u>
<u>Age</u>	
0-21	>1
22-45	59
46-65	36
66+	4
<u>Gender</u>	
Male	56.6
Female	43.4
<u>Race</u>	
Caucasian	83.2
African American	16.8
<u>Level of Mental Retardation</u>	
Mild	2.5
Moderate	3.4
Severe	4.7
Profound	89.2
Unspecified	0
<u>Target Behavior *</u>	
Self –injury	30
Physical aggression	78
Property Destruction	38

* Some individuals exhibited multiple targeted behaviors.

Participants who engaged in maladaptive behaviors of physical aggression, property destruction, self-injurious behaviors and other excesses that threatened the safety of others as well as themselves, may have historically been subjected to restraint and were identified as the group to be the most significantly affected.

REVIEW

Both the Behavior Intervention and Human Rights Committee reviewed all programmatic restraints in the context of the behavior support plan prior to plan implementation. Through review of data and indicated function of targeted behaviors, planned restraints procedures and emergency restraint use were evaluated and modified as necessary. In addition, any unplanned restraints were reviewed weekly by a center wide incident review committee to determine whether a behavior support plan was warranted, and whether planned inclusion of restraint was necessary. The objective was to eliminate “emergency” restraint by planning them carefully for those who might require them at some point. Thus, all accident/incident reports (See Appendix C) and restraints forms (See Appendix B) were reviewed weekly.

For the purpose of this study, restraints included any personal, mechanical or chemical restraint utilized for the attenuation of dangerous challenging behavior. Physical restraints included physical holds such as the baskethold, two-hand grasp, escort procedures, and mechanical devices including mittens, 4/5-point restraints, etc. Chemical restraints included use of any non-selective medication, on an emergency basis, to quickly suppress challenging behavior.

PERSONS AUTHORIZING RESTRAINT

Six doctoral level psychologists, 4 master’s level associates to a psychologist, and two physicians were in-serviced on systemic changes in use of restraint and behavioral programming

by the director of psychological services (a licensed clinical psychologist) as well as another Ph.D. psychologist who served as the chair for the state's restraint committee. Each psychologist had been formally in-serviced on behavior modification techniques and importance of least restrictiveness in behavioral programming and had worked within the residential facility for at least 6 months. Each psychologist was carrying a caseload of no more than 30 individuals with mental retardation.

TRAINING

Staff who worked with all participants were required to undergo 16 hours of the facility's training on the management of crisis situations. Staff were trained to demonstrate knowledge of conditions warranting restraint use. Competency based training in the following areas was paramount: 1) procedures for preventing and de-escalating behaviors that could be an antecedent to dangerous behaviors (physical aggression, property destruction, and self-injury); 2) safe application of physical holds and disengagement procedures (i.e., how to remove oneself from a choke hold); 3) recognition of signs of physical distress when an individual is restrained (difficulty breathing, loss of bladder control, skin discoloration, lack in responsiveness).

Staff also received 8 hours of training in restraint theory and application taught by certified instructors. All staff were expected to achieve at least 90% on a test of knowledge of restraint theory, and were retested until criteria was met. Specifically, the restraint education program included the following components: (1) resident's rights, ethics and individual's autonomy (Stratmann , Vinson, Magee & Hardin, 1997); (2) misconceptions about restraint use (Swauger & Tomlin, 2000; Bradley, Siddique, & Dufton, 1995); (3) dangers of physical restraint (Missildine & Harvey, 2000); and (4) feelings and attitudes about restraint.

They were required to demonstrate correct application of physical restraint as well as proficiency in completing appropriate restraint documentation (See Appendix B). Additionally, as part of their initial orientation training at the center, all employees were required to be knowledgeable in completing the facility's accident/incident report form for all injuries.

All staff were trained by one of the licensed psychologists on basic behavioral techniques, as they were required to implement behavioral support plans on a daily basis. Staff were required to demonstrate competency in the specified behavior support curriculum through didactic learning, demonstration and role play. The curriculum emphasized knowledge of: 1) benefits of enriched environments, skills for the encouragement of positive interactions with individuals with mental retardation; 2) strategies for helping persons with developmental disabilities acquire new skills; 3) strategies to decrease maladaptive behavior, and selection of strategies for behavioral support. An exam was given on which staff had to score at least 90% or they were retrained and retested.

RELIABILITY

Interrater reliability was achieved between the director of psychological services and each Ph.D. psychologist and master's level associate to a psychologist in determining when an unplanned/emergency restraint was to be implemented. In every instance that an unplanned/planned restraint was warranted, both the caseload psychologist and the director of psychology assessed the necessity of physical restraints. Once 100 % reliability was achieved between the two for at least 3 observations, all reliable psychologists could authorize physical unplanned restraints.

Interrater reliability was calculated by dividing the number of rater agreements by the sum of agreements and disagreements, which was then multiplied by 100 for the percent of

agreement between the raters. An “on call” procedure was then initiated so that the designated psychologist made the decision concerning unplanned physical restraint use for emergency management of targeted maladaptive behaviors.

PROCEDURE FOR RESTRAINT AUTHORIZATION

Planned physical restraints were authorized in the following manner: 1). Direct support staff, or anyone with the individual requiring restraints alerted the psychologist of record once the situation was under control; 2) The psychologist reviewed data and determined if additional steps need to be taken (no change in procedure, further assessment, changes in treatment strategies, etc.); 3) qualified nursing staff checked the condition and safety of the individual in restraints within 15 minutes of initiation and every hour following; 4) the psychologist of record reviewed essential data (behavioral topography, antecedent events, and consequences of behavioral excess) no later than the following day; 5) overall restraint trends were reviewed by the Behavior Intervention Committee and Human Rights Committee.

In the event that an unplanned restraint was necessary, the licensed psychologist designated as “on call” was to be notified immediately, as well as the psychologist covering the individual’s program during normal work hours. After which, the psychologist on call authorized use of unplanned behavioral restraint. Reasonable attempts to contact the individual’s family or guardian was made within 24 hours.

When chemical restraints were necessary to control behavioral excess, the following procedure was to be implemented: 1) the licensed psychologist was requested to notify the physician of the situation and the rationale for possible need for chemical restraint; 2) after consultation between the two, chemical restraint was implemented as a last viable option to keep the individual and others at risk safe from harm; 3) effective, time scheduled monitoring was

required; 4) the day after the first instance of unplanned chemical restraint, an interim plan approved by BIC and HRC were required.

DATA COLLECTION

Monitoring and evaluation of restraint effectiveness was assessed through careful documentation of each restraint application. Information was recorded on a system based restraint form (See Appendix B), on which the staff documented the name of the consumer, identification number and residence, type of restraint (planned or unplanned), and method of restraint (personal, mechanical or chemical restraint, and specific type employed). Time that restraint was implemented and duration of restraint was also noted.

A database was also created and maintained to facilitate easy queries of the restraint information to assess trends in the data, if present. Specifically, queries included the number of times each type of restraint was used per day, week, month and year; the number of episodes involving restraint by individual, home, and unit at the center, and the number of injuries and deaths associated with restraint. Each restraint was reported to the psychologist of record; however, programmatic restraint did not require direct observation prior to implementation.

HYPOTHESES

With the training and implementation of programmatic changes the following outcomes were expected:

1. It was hypothesized that overall restraint use would decrease from pre-policy training/implementation to the following 18 months. As restraint use is the most restrictive means of behavior treatment management, a reduction signaled improvement in treatment selection effectiveness, improved behavior management and effective restraint education training. A repeated measures Analysis of Variance (ANOVA) was used to analyze the data.
2. It was hypothesized that restraint use would steadily decrease over time as the systemic changes were effectively and reliably implemented. Restraint use was evaluated prior to policy implementation and every three months for 18 months. Data was analyzed with a Repeated Measures ANOVA .
3. It was predicted that in addition to restraint reduction, use of psychotropic medications would also decrease over time. We not only wanted to show a decrease in restraints, but that behavioral management was effective without merely increasing medication use. Psychotropic medication use was assessed at the same time increments as were restraints, utilizing the same statistical analyses.
4. Overall injuries sustained due to restraint use was also hypothesized to decrease with the implementation of systemic changes. Research indicated that planning restraints as opposed to use of unplanned emergency restraint prepared staff to restrain when necessary with fewer injuries to the individual requiring the procedure.

RESULTS

HYPOTHESIS I

A one way repeated measures ANOVA was conducted yielding results that overall restraints (physical and chemical) significantly decreased from pretest to 18 months after a programmatic restraint reduction program was implemented, $F(1, 6)=10.41$, $p< .05$. A 94% reduction in overall restraints occurred over the duration of the study.

HYPOTHESIS II

A one way repeated measures ANOVA was conducted in which there was a significant overall decrease in restraint usage during the 7 recording periods as depicted in the graph below, $F(1,6)= 13.8$, $p< .05$. As an aside, followup data indicates that restraint use continues to remain low to date.

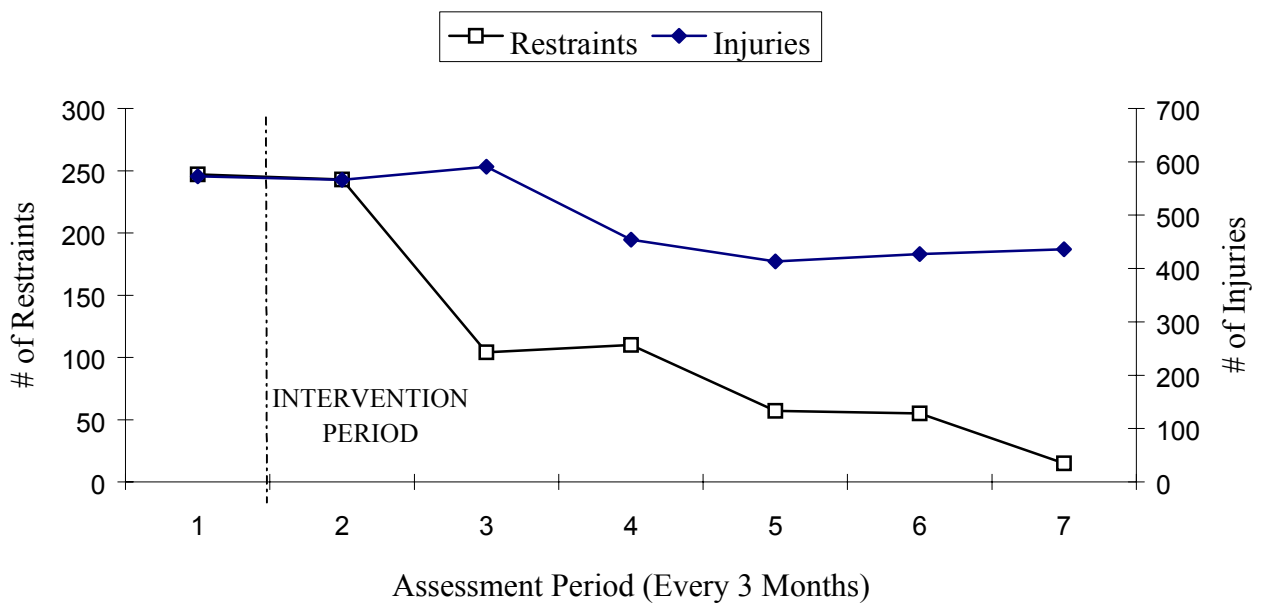


Figure 2. Centerwide Restraint and Injury Trend.

HYPOTHESIS III

A one way repeated measures ANOVA was conducted to evaluate the hypothesis that psychotropic medications use would decrease upon implementation of programmatic changes. Results indicated that medication use was significantly lower from the pretest to posttest final assessment, $F(1, 6)= 303.99, p< .05$. Overall psychotropic medications experienced a 29% reduction over the duration of the study. Use of polypharmacy also significantly decreased at posttest evaluation, $F(1,6)= 57.53, p< .05$ with a 55% reduction overall . Continuous reduction at each assessment time interval was observed (See Figure 3). These findings are significant from a programmatic standpoint as it clearly demonstrates that medication use was controlled and decreased while restraint totals also decreased.

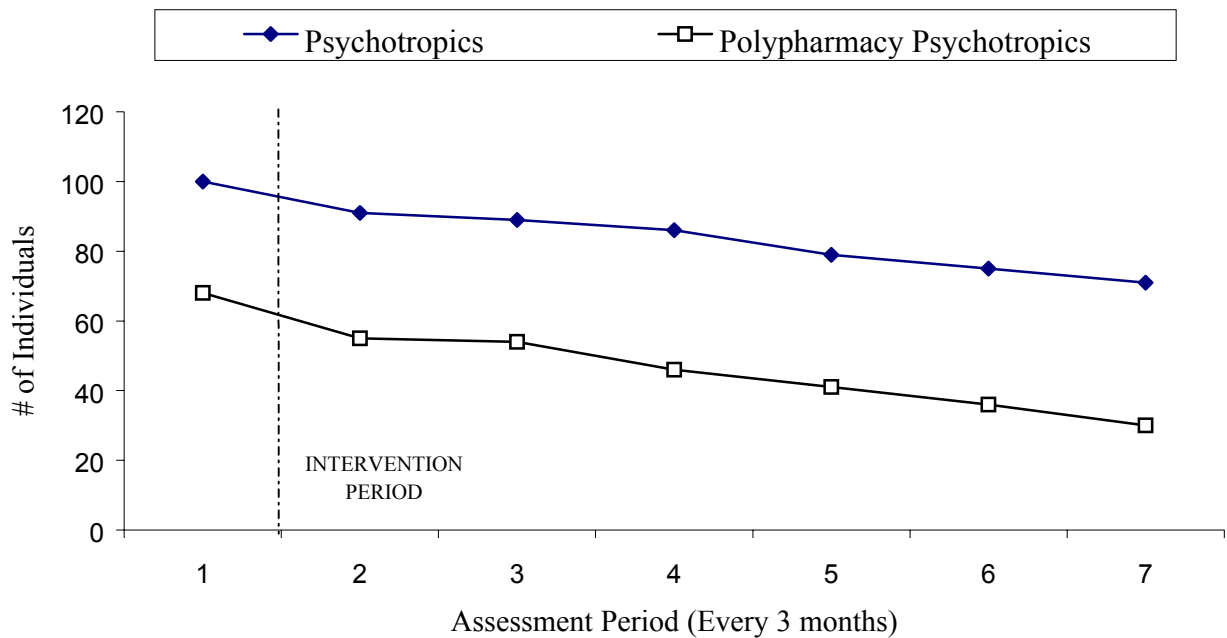


Figure 3. Psychotropic Medication Trend.

HYPOTHESIS IV

No injuries were documented to have occurred during the restraint procedures used in this study. Trend of overall injuries at the center was documented (See Figure 2).

DISCUSSION

Restraint use decreased significantly from the start of the investigation to the final assessment 18 months later, with a steady reduction over the established time. Along with marked reduction of restraint use, psychotropic medication usage also decreased significantly following training and implementation, as well as polypharmacy used for the treatment of targeted behaviors and symptoms. Results are discussed below.

OVERALL RESTRAINT OUTCOMES

Hypothesis 1 proposed that overall restraint use would decline after rigorous training, reliable implementation of behavioral and restraint procedural changes and continued oversight. Not only did overall restraint use decrease, but also incidents of unplanned emergency restraints were at near zero rates at the final assessment time period. In order to improve programming for individuals for whom restraint was often necessary or possibly indicated, careful planning was initiated to prevent disorganized implementation of emergency restraint.

These results replicated those found in several pre-post studies which evaluated restraint minimization programs. Although subject to some bias as this was not a randomized controlled trial in design, results highlight effective systemic changes that are indicative of successful reduction of unwarranted restraint use. In the largest study of this type, Neufeld et. al. (1999), introduced a restraint education program at 16 nursing homes involving 2075 individuals. In addition to an overall restraint reduction of 41%, serious injury decreased or remained stable at all but one of the homes.

It is important to address factors that contributed to the success of restraint reduction systems as the program evaluated in this study did not address each component's effectiveness independently. In review of the literature, it was found that successful programs included well-

developed restraint education and organizational involvement in terms of a restraint committee or task force (Shadlen, 1991; Levine et. al. 1995, Chalifour, 1997), multidisciplinary support (Jensen et. al, 1998; Si et. al, 1999), and revision of current policy, which were all components of the current study. Only one randomized clinical trial was found that evaluated a restraint reduction program (Evans et. al., 1997), although several before/after evaluations were conducted. The most significant decrease in restraints was found when education training was paired with consultation, which was an essential component of this study as well.

RESTRAINT TREND

Hypothesis 2 predicted that the number of restraints used would steadily downtrend throughout the duration of the study, which was supported by a significant reduction in restraints over time. Restraints were evaluated at seven assessment periods, and a clear reduction pattern was established. The continued reduction was not confounded by outside placement, or situations causing attrition. Finally, once the study was initiated, new residents to the center were not included.

Frequent monitoring and oversight of the Behavior Intervention Committee, Human Rights Committee, and Incident Management Committee (of which the head licensed clinical psychologist was chair), were essential to ensure that any fluctuation, new incident or change in restraint was carefully assessed and addressed. Most importantly, the reduction over time supported research that through appropriate modification and implementation of effective training and restraint education programs, restraint reduction was maintained over time. Some studies conducted over extended periods of time of a year (Kramer, 1994; Mason, O'Connor, & Kemble, 1995), two (Dunbar, Neufeld, Libow, Cohen, & Foley, 1997), and three years, (Levine, Marchello & Totolos, 1995) all showed sustained restraint reductions over time. Only one study

that incorporated policy change and restraint education contradicted these findings. An initial reduction from 32% to 18% occurred in the first 6 months, then increased to 54% by the end of the year (Lever, Molloy, Eagle, Butt, Bedard, Millar & Stiles, 1994), which we attempted to resist through careful monitoring and retraining when necessary.

MEDICATION TREND OUTCOME

As hypothesized, use of psychotropic medication steadily decreased throughout the study. This supports the underlying goal to improve the behavioral intervention programming provided to the individuals exhibiting challenging behaviors while decreasing the use of highly restrictive procedures. Psychotropic medication use was not proposed to be wholly eliminated as its appropriate use for the treatment of psychiatric disorders is warranted. However, research literature indicates that such medications are frequently used as a first line treatment for maladaptive behavior, despite findings that the heavily used antipsychotic and anti-epileptic medications adversely affect prosocial behavior (Dent, 1995; Matson et. al, 2000) and are related to irreversible and dangerous side effects (Brasic & Barnett, 1997).

Traditional antipsychotics are most frequently prescribed to treat physical aggression and self-injury in persons with mental retardation, although sound research does not support its effectiveness at suppressing such behaviors. Although indicated in the treatment of certain psychoses, such medication regimes should be more cautiously attempted only after less restrictive behavioral intervention techniques have been attempted and failed. Results of this study support continued research to improve behavioral and restraint training of all staff in facilities and centers that provide services for individuals with mental retardation who exhibit challenging behaviors.

In one randomized control trial study of a restraint reduction program in three residential facilities, results indicated that although restraint decreased significantly, psychotropic drug use did not increase as might be expected, but also decreased at every facility (Siegler et. al, 1997). Results of this study supports evidence from several others that showed a decrease in psychotropic medication use after initiation of a restraint reduction program was initiated (Werner et. al., 1997; Rovner et al., 1996). Given the paucity of methodologically sound research on use of psychotropic medication for the treatment of aggression, self-injury, property destruction and other challenging behaviors (Matson et. al, 2000), the findings of this current study are encouraging. The simultaneous decrease in psychotropic medication use and polypharmacy treatment with restraint reduction is promising as it indicates overall effectiveness of the system's programmatic changes and implementation.

It is interesting that no injuries were reported during the study's duration to be a direct result of restraint application. All staff were informed and trained on the correct documentation of injuries, however it is believed that staff are less likely to report injuries that may be interpreted as a failure on their part to implement restraints appropriately. The overall injury trend during the study was noted, however no relationship to restraint reduction could be ascertained. Injuries were documented to either occur prior to restraint use, or outside of behavioral exacerbations (mobility deficits, accidents, seizure, etc). Further investigation of this phenomena is warranted, as this study sought to support reduction of injuries when alternatives to restraint are sought, appropriate de-escalation techniques are utilized and restraints are planned procedures that staff can effectively and reliably implement.

IMPLICATIONS FOR PRACTICE AND FUTURE RESEARCH

Nationwide investigations of nursing homes, acute and psychiatric care facilities, and long term residential and intermediate care facilities for persons with mental retardation have indicated unacceptable rates of improper restraint and seclusion. In attempts to comply with Federal guidelines, many organizations have sought to develop policies and guidelines to provide direction in the safe and appropriate use of restraint, as well as measures to hopefully reduce the necessity of use in the future. Many studies have investigated the effectiveness of restraint minimization programs in both acute and residential programs and the components that made those programs successful. However, it is often difficult to obtain rigorous experimental control in this type of study.

Investigation of individual components of the restraint programs warrant further research to determine those element most critical in restraint reduction and improved services. Inclusion of sound education of restraint application, individual's rights, legal mandates concerning restraint use and release, alternatives to restraint use, as well the required demonstration of proficiency in performance of all procedures were instrumental to this program's overall success.

Expert consultation was also noted to contribute to the improvement of staff's ability to choose alternatives to restraint use without merely increasing or prescribing psychotropic medication. The literature indicates that studies have included the support of experts, clinical coordinators, and members of restraint committees via phone consultation and actual site visits (Neufeld et. al, 1999; Swauger & Tomlin, 2000), as part of the education process (Jensen et al., 1998), and as actual case managers (Ejaz et al. 1994a). One random controlled trial study combined education and expert consultation which resulted in restraint minimization (Evans et

al., 1997) and support to its combined effect was demonstrated in Strumpf et. al, (1992) which indicated that education alone resulted in no restraint changes.

More rigorous investigation of restraint education programs is warranted, as there are other elements that may improve the system as a whole. Some research indicate that length of the training program may impact the efficacy of the program as well (Bradley, Siddique, & Dufton, 1995). As a large body of the literature has been conducted in elderly populations, continued replications are warranted in the long-term residential facilities providing services for individuals with mental retardation. Effectiveness should also be measured by evaluating injuries sustained, as well as other major factors of staffing level and cost of service delivery. Research continues to be warranted in ICF-MR facilities, specifically addressing alternatives to restraint use with emphasis on behavioral techniques in the absence and/or careful monitoring of psychotropic medication use. Further evaluation of restraint reduction impact on resident outcomes such as length of stay, morbidity and mortality, and mobility status are important research questions which can assist in refining and modifying effective systems.

CONCLUSION

The importance of this study was not to support total elimination of restraint procedures in the management of challenging behavior, but to empower the organization to carefully assess its use in cases where less restrictive procedures could be effective in keeping the individual and others around him or her safe in the exhibition of challenging behaviors.

Restraint use significantly declined as a result of effective implementation of system wide programmatic guidelines in restraint education, training in behavioral techniques, de-escalation procedures, and careful oversight/monitoring. The decline was steady with no significant variability across assessment time periods. Use of psychotropic medication use also declined, supporting the effectiveness of the overall training package. This study supports the results of past studies and incorporates elements that were found to be essential for a successful restraint reduction within the center. Given the negative attitudes, staff and individual injuries, death, and ultimately, failure of the system when restraints are improperly utilized in the absence of training and proficiency, education remains warranted. Maintenance of restraint reduction efforts is the most important outcome of such studies, and thus, generalization of systems must occur and coincide with continued education initiatives.

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APPENDIX A
POLICY ON RESTRAINT AND SECLUSION
OFFICE OF CITIZENS WITH DEVELOPMENTAL DISABILITIES
STATE OF LOUISIANA

I. PHILOSOPHY

The Office for Citizen's with Developmental Disabilities (OCDD) is committed to providing services that promote each individual's right to the opportunity for personal growth and freedom. People with developmental disabilities are entitled to the same dignity and freedom afforded to every citizen in our society. This includes the right to move freely without intervention. Yet, when individuals engage in behaviors that seriously endanger their health and safety or the health and safety of others, restraint may be necessary. However, restraint is not an acceptable long-term solution. OCDD strives to eliminate the need for restraints for each individual through proactive, long-term strategies based on an understanding of the person's needs and the conditions resulting in restraint. Additionally, stringent limitations are placed on the use of restraint to ensure that those served by OCDD are free from the unnecessary or unsafe use of restraints.

II. PURPOSE

The purpose of this policy is to establish standards for the safe and appropriate application of restraints and for the development of plans for reducing and/or eliminating the need for restraints through effective prevention and treatment services. These standards:

- (1) affirm the rights of individuals served by OCDD;
- (2) establish limitations on the use of restraint;
- (3) prohibit the use of seclusion;
- (4) establish procedures for developing, implementing and evaluating plans for treating behaviors and/or altering conditions resulting in restraint;
- (5) establish staff qualifications for the use of restraints;
- (6) establish procedures for the documentation and oversight of restraints; and
- (7) establish procedures for evaluating the success of OCDD in reducing and/or eliminating the use of restraint for each individual served.

III. CONSUMER RIGHTS

All persons with developmental disabilities have the basic right to be free from the unnecessary use of restraints and should be ensured protections regarding their use. These protected rights include:

- (A) the right to be free from restraints imposed for the purpose of coercion, discipline or convenience of or retaliation by staff;
- (B) the right to receive active treatment to reduce dependency on chemical, mechanical or personal restraints;
- (C) the right for restraints to be considered only;
 - (1) when clinically warranted for medical and/or surgical care pertinent to the individual's well-being; or
 - (2) when clinically warranted as a component of the Individual Program Plan for the purpose of protecting the individual and/or reducing or eliminating behavior(s) that represent an imminent risk of injury to the person or others or involves continuous significant property damage; or
 - (3) when necessary in an emergency situation where the behavior of the individual represents an imminent risk of injury to the person or others or involves continuous significant property damage; and
- (D) the right to safeguards concerning the application of restraint as established in this policy.

IV. DEFINITIONS

Behavior Intervention Committee - Each agency in which behavior intervention programs are used will have a Behavior Intervention Committee (BIC). This Committee includes persons qualified to evaluate published behavior treatment research studies and the technical adequacy of proposed behavioral interventions.

Chemical Restraint (for behavior) – This involves prescribing non-selective medications for the suppression of an individual's behavior. Chemical restraint is the use of medications that lack research support as a treatment for an individual's condition, as based on the individual's current DSM-IV diagnosis or specific behaviors observed. The long-term use of medications for managing behavior without evidence of effectiveness is also considered chemical restraint. A chemical restraint entails the use of a neuroleptic and/or a benzodiazepine to achieve a general suppression of behavior via sedation. In the case of the neuroleptic, a general suppression of movement may also be achieved via neuroleptosis. The following are not considered chemical

restraint: (1) the use of psychotropic medications to selectively treat a DSM-IV diagnosis for which research supports the use of the medication; and (2) the use of “light sedation” (see definition in this policy). For a more comprehensive discussion of chemical restraint please refer to “Psychotropic Medications” in the State of Louisiana’s Guidelines for Behavioral Support: A Person Centered Approach.

Exclusionary Time-out – A restricted programmatic procedure involving the contingent use of an enclosed area (i.e., time-out room) following a challenging behavior is an exclusionary time-out. This procedure must meet the most stringent guidelines for use as defined by Louisiana’s Guidelines for Best Practices and the Accreditation Council.

Human Rights Committee - Each agency will have a Human Rights Committee (HRC). This committee includes individuals served and/or their representatives, individuals not affiliated with the agency and individuals with training or experience with issues and decisions regarding rights.

Incident Management Committee – This is a designated interdisciplinary committee that reviews all behavioral and medical incidents in accordance with an agency’s established policies and procedures.

Individual Program Plan (IPP) - A plan developed by an interdisciplinary team that represents the professions, disciplines, or service areas that are relevant to: (1) identifying the individuals needs; and (2) designing programs that meet the individuals needs. (Survey Procedures and Interpretive Guidelines for Intermediate Care Facilities for the Mentally Retarded, Appendix J, J75, W206; July 1, 1996).

Informed Consent – Informed consent involves the presentation of information to an individual or their legal guardian relevant to the individual’s services and their consent for implementation of the plan. At minimum, the information presented: (1) includes all essential components of the proposed service approach necessary to evaluate potential risks and benefits; (2) is presented in a manner that maximizes the individual’s or their legal guardians understanding of the information presented; (3) ensures that the individual or their legal guardian is responding voluntarily; and (4) informs the individual and/or their legal guardian of their right to withhold or withdraw consent at any time.

Interdisciplinary Team (IDT) -The interdisciplinary team is a group of people working together to develop, continually review and revise as necessary, an individual program plan that is most appropriate for the specific individual who is to be served. With a person-centered focus, team membership is determined by the needs and desires of the individual. The individual being served and his or her family, advocates, or significant others are essential members of the IDT.

Light Sedation – The term “light sedation” refers to the use of medications during medical or dental procedures to reduce anxiety with minimal or no alteration in level of consciousness. This includes medications that induce a state that allows a patient to tolerate unpleasant procedures

while maintaining adequate cardiorespiratory function and the ability to respond purposefully to verbal commands and/or tactile stimulation.

Mechanical Restraint – Restraints involving the application of any physical device to the body of an individual for the purpose of restricting or suppressing the person's movement and preventing normal access to the body. Each organization must identify methods and devices authorized by the agency for restraint, based on the individual needs of the people served in their agency.

Medical Restraints – Restraints applied as a health-related protection that are prescribed by a physician. Such restraints are only used when absolutely necessary during the conduct of a specific medical or surgical procedure, or when absolutely necessary for the individual's protection during the time that a medical condition exists. (Survey Procedures and Interpretive Guidelines for Intermediate Care Facilities for the Mentally Retarded, Appendix J, J110, W297; July 1, 1996).

Orthopedic Appliances – Orthopedic appliances are not restraints and include any mechanical device designed to improve mobility, to increase postural support, or to minimize a physical disability. They must be recommended by a licensed occupational or physical therapist and prescribed by a physician. The individual's need for an appliance and logistics concerning where, when, what and how an appliance is to be utilized must be clearly documented.

Personal Restraint – Restraints involving the application of body pressure to an individual for the purpose of restricting or suppressing the person's movement. This does not include approved training techniques such as physical guidance, redirection, and escorts involving brief holds for less than 30 seconds in which no aggressive resistance is observed.

Physician's Authorized Designee – A Physician's Authorized Designee is a staff person who acts in place of the licensed physician and is responsible to the physician. Criteria to serve in this capacity are as follows: (1) approval of the licensed physician responsible for the individual's medical health; and (2) approval of the agency's administrator; and (3) the necessary training and/or experience in medical/health services appropriate to the needs of the individual(s) served.

Planned Behavioral Restraint – This is the anticipated use of restraint in response to an individual's behavior, not to include restraints utilized when conducting a medical treatment. The plan is developed by the interdisciplinary team as part of the Behavior Support Plan and/or Individual Program Plan.

Planned Chemical Restraint - Planned chemical restraint is the anticipated use of a non-selective medication to suppress behavior, in general, with the intention of controlling a problem behavior (see definition of chemical restraint).

Planned Medical Restraint – This is the anticipated use of a restraint to prevent interference with a necessary medical procedure or for protection during an ongoing medical condition. The etiology is medical, with the exception of behaviors indicative of a psychiatric disorder. The plan is developed by the interdisciplinary team as part of the Individual Program Plan. For example: (1) restraint during ongoing medical assessment and treatments; (2) restraint procedures employed to allow healing; and (3) restraint employed to protect the individual from medical trauma in the future (e.g., helmet for individual with severe seizures).

Psychologist's Authorized Designee – A Psychologist's Authorized Designee is a staff person who acts in place of the licensed psychologist and is responsible to the psychologist. Criteria to serve in this capacity are as follow: (1) approval of the licensed psychologist responsible for the individual's behavioral and psychological services; (2) approval of the agency's administrator; and (3) training and/or experience appropriate to the psychological needs of the individual(s) served.

Restraint- Restraint is the direct application of a physical hold (personal restraint), mechanical device (mechanical restraint), and/or medication (chemical restraint) for the purpose or restricting or suppressing the person's movement or preventing the person access to the body. Restraints may be behavioral or medical and planned or unplanned as further defined in this section.

Seclusion – Seclusion refers to the involuntary confinement of a person in a locked room. This does not include exclusionary time-outs (as defined by this policy) implemented as part of an approved Behavior Support Plan.

Unplanned Behavioral Restraint - An unplanned behavioral restraint is the unanticipated use of restraint to prevent self-injury, physical aggression, and/or significant continuous property damage. It has not been included in an approved Behavioral Support Plan or Individual Program Plan.

Unplanned Chemical Restraint – An unplanned chemical restraint is the unanticipated use of a medication to suppress behavior, in general, with the intention of achieving additional control of a problem behavior (see definition of Chemical Restraint).

Unplanned Medical Restraint – An unplanned medical restraint is the unanticipated use of a restraint, as ordered by a licensed physician, to prevent interference with a necessary medical procedure or for protection during an ongoing medical condition. For example: (1) restraint during medical assessment and/or treatment not currently identified in the person's Individual Program Plan; (2) restraint procedures employed to allow healing not currently identified in his or her Individual Program Plan; and (3) restraint employed to protect the individual from medical trauma in the future (e.g., a helmet to protect an individual from falls due to a sudden onset of seizures) and not currently identified in his or her Individual Program Plan.

V. STAFF TRAINING AND COMPETENCE

Staff involved in the application of restraints must be trained and competent in methods for minimizing the use of restraint and for safely applying restraint. Each agency is responsible for ensuring that these staff members receive the necessary training and are qualified. The following training must be documented.

- A. Staff demonstrate knowledge concerning the conditions necessary for implementation of a restraint.
- B. Staff demonstrate competency in the use of procedures taught in the Crisis Prevention Institute, Inc. Nonviolent Crisis Intervention Program. This includes competency-based training in:
 - (1) procedures for preventing, de-escalating, and/or mediating when emotional behaviors are displayed that may precipitate more aggressive behaviors;
 - (2) procedures for safely applying physical holds as a form of restraint; and
 - (3) knowledge of the signs indicating physical distress when an individual is restrained (i.e., verbal complaints, difficulty breathing, loss of bladder control, choking, lack of responsiveness or alertness, and skin discoloration).
- C. Each agency must ensure that staff are competent in the use of a specific type of mechanical restraint before applying such a device. Staff must know how and when to apply the restraint, when to release the restraint, how to document restraint, procedures for monitoring the individual during restraint, and other information pertinent to the safety of administering the restraint.
- D. Staff must demonstrate competency in a behavior support training curriculum that involves didactic learning, demonstration, and role-play procedures designed to teach:
 - (1) values associated with effective behavior support planning;
 - (2) characteristics and benefits of enriched environments;
 - (3) skills for encouraging positive interactions with individuals served;
 - (4) strategies for helping people with developmental disabilities acquire new skills;
 - (5) strategies for reducing challenging behaviors;
 - (6) procedures for selecting strategies for behavior support;

- (7) procedures for identifying and documenting challenging behavior; and
 - (8) details concerning formal Behavior Support Plans including their purpose, essential components of the plans and the importance of reliable implementation.
- E. Schedules for ongoing training must be established to ensure that all staff involved in the use of restraints receive training, at least annually, and demonstrate 100% proficiency on competency-based performance evaluations.
- F. The licensed physician, registered nurse or licensed practicing nurse providing assessment of individuals health during and after restraints must demonstrate knowledge of the restraint policy at their facility and be proficient in the following:
- (1) taking vital signs and interpreting their relevance to the physical safety of the individual in restraint;
 - (2) recognizing nutritional/hydration needs;
 - (3) addressing physical and psychological status and comfort;
 - (4) recognizing when to contact a additional medical staff or emergency medical services in order to evaluate and/or treat the individual's physical status; and
 - (5) documenting the process and outcomes.
- G. Staff responsible for visually and continuously monitoring the restraint will demonstrate competence in the following:
- (1) knowledge and implementation of facility restraint policies;
 - (2) application of restraints;
 - (3) recognizing signs of distress;
 - (4) recognizing when to contact a physician or emergency medical services in order to evaluate and/or treat the individual's physical status; and
 - (5) documenting the process and outcomes.
- H. Staff must be competent in first aid, cardiopulmonary resuscitation and know procedures for accessing emergency medical services rapidly.

- I. Staff training of individuals involved in behavioral restraints must incorporate individuals who have experienced restraint and/or allow trainees to experience restraints of various types to gain insights from the perspective of people who are restrained.

VI. PROCEDURES FOR THE USE OF BEHAVIORAL RESTRAINT

Procedural regulations concerning the application of behavioral restraints are divided into two sections: (1) limitations on the use of behavioral restraint; and (2) procedures for monitoring and evaluating the use of behavioral restraint.

1. Limitations on the Use of Behavioral Restraint

- (1) Restraint procedures shall be applied with respect to the individual rights as identified in the Consumer Rights section of this policy.
- (2) Prior to the implementation of a restraint, staff have demonstrated competence in administering and documenting the restraint.
- (3) Restraint is selected only when:
 - (a) previous less restricted interventions have been found to be ineffective and/or are not clinically indicated; and
 - (b) the individual's behavior is potentially injurious to self or others or the person engages in continuous significant property damage.
- (4) Restraints shall not be written as a standing order or on an as needed basis (i.e., PRN).
- (5) All individuals receiving services through OCDD Developmental Centers are assessed by a physician to determine if any form of restraint is contraindicated for health, safety, and/or medical reasons. These assessments will be repeated at least annually and will be updated as needed depending on the medical status of the individual receiving services.
- (6) If unplanned restraints are required in rapid succession and there is a high likelihood of the need for further restraint before the standard approval procedures can be followed, an interim approval procedure must be followed. A written description of the interim approval procedure must be defined by each agency.
- (7) Use of restraint(s) shall be incorporated as a formally written behavioral support component of the Individual Program Plan, if the need for restraint is anticipated by the Interdisciplinary Team (i.e., more than 3 episodes involving restraint in a 3 month period). This plan must include procedures for preventing the need for restraint, skill acquisition training relevant to the behaviors leading to restraint, interventions, and a description of the specific restraint(s) to be used.

Note: For a comprehensive description of authorized practices for the development and implementation of behavior control and intervention procedures, refer to Louisiana 's Guidelines for Behavioral Support: A Person Centered Approach.

- (8) Planned restraints require informed consent and the approval of the Interdisciplinary Team (IDT), the Behavior Intervention Committee (BIC) and the Human Rights Committee (HRC). Approvals must consider the risks of restraint versus the risks of not using restraints and the appropriateness of the procedure as used in the plan.
- (9) An interim approval process must conform to the following minimum guidelines:
 - (a) The IDT will meet and weigh the potentially harmful effects of the restraint against the harmful effects of the dangerous behavior. The IDT's decision that the harmful effects of the behavior clearly outweigh the harmful effects of the procedure will be documented in the individual's record.
 - (b) The IDT will consider the least intrusive, effective procedure necessary to safely address the individual's dangerous behavior. The procedure will be incorporated into the individual's behavior support plan and will become part of the individual's IPP.
 - (c) The individual's physician will determine and document that the use of the procedure is not medically contraindicated.
 - (d) The proposed plan will be submitted to Chairperson(s) of both the BIC and HRC or their designee(s).
 - (e) These two chairpersons or designees and two members from each committee will review the proposed behavioral procedures and may grant temporary approval for implementation. The date of expiration of this temporary approval must be specified and may not exceed 30 calendar days.
 - (f) The consumer 's behavior support staff will train and qualify staff members in the proper implementation of the plan and monitor implementation.
- (10) Prior to the implementation of planned chemical restraints, the following standards must be met.
 - (a) An extensive rationale shall be provided to the IDT, the BIC, and the HRC detailing the following:
 - (1) past treatment attempts to include both psychoactive medication treatments and behavioral treatments and their outcomes; and
 - (2) evidence that the risks of using non-selective medications to suppress behavior clearly outweigh the risks of alternative treatment choices.
- (11) Unplanned chemical restraint shall only be implemented when other measures have proved ineffective or are contraindicated as determined by the licensed psychologist.

They must be limited to emergencies in which there is imminent risk of harm to an individual, to others in the proximity of the individual or to situations in which the individual is engaged in continuous significant property damage.

- (12) The licensed psychologist may supervise an authorized designee to perform duties concerning the authorization of restraint. The psychologist's authorized designee must meet qualifications as defined in this policy.
- (13) The treating physician may supervise an authorized designee to perform duties concerning the authorization of restraint. The physician's authorized designee must meet qualifications as defined in this policy.

B. Monitoring and Evaluation of Behavioral Restraints

Authorized behavioral restraints as allowed within the limitations specified in this policy are subject to the following standards concerning monitoring and evaluation.

- (1) Restraints require continuous visual monitoring and documented checks every 15 minutes by qualified direct care staff.
- (2) Steps for the authorization and initial review of restraint shall include the following:
 - (a) Direct support staff (or other personnel with the individual requiring restraints) shall contact the licensed psychologist immediately, once the situation is under control;
 - (b) The licensed psychologist shall assess issues concerning the use of the restraint and, based on the information provided, determine steps or procedures to be followed (i.e., no change in procedure, no additional steps, additional observations, further assessment, changes in treatment strategies, consultation, medical assistance, etc.);
 - (c) Each agency shall have procedures for administrative approval or oversight of the proposed actions (i.e., contacting an administrative duty officer, reporting to the administrator, etc.).
- (3) Following the initiation of a restraint, qualified nursing staff will, at minimum, check the individual's condition and the safety of the restraint within 15 minutes and each hour thereafter.
- (4) When using mechanical restraints, attempts must be made to release the individual from the restraints for a minimum of 10 minutes each hour thereafter, as necessary, to allow opportunities for exercise and restroom use. If, during attempts to release the individual from restraint, the individual engages in behaviors necessitating restraint (as defined in this policy), a new restraint may be immediately implemented upon authorization.

- (5) Following each episode involving restraint(s), the licensed psychologist will review essential data by the next working day. Essential data will include, at minimum, antecedent events, topography of the behavior and consequences.
- (6) Agency-wide trends involving behavioral restraints will be reviewed, at minimum, monthly by the agency ' s Behavior Intervention Committee and Human Rights Committee.
- (7) Additional Standards for Monitoring and Evaluating Unplanned Behavioral Restraint
- (a) When unplanned behavioral restraints are used, reasonable attempts must be made to notify family or advocates within 24 hours.
 - (b) The use of unplanned behavioral restraints shall be reviewed within 5 days by the agency's Incident Management Committee.
 - (c) Each agency must have a policy/procedure for alerting psychology staff as to use of an unplanned behavioral restraint.
 - (d) If deemed necessary, pursuant to the professional judgment of the licensed psychologist, a mechanical restraint may be applied.
- (8) When chemical restraints are used to control behavior, the following additional standards shall apply.
- (a) Prior to implementation of a chemical restraint, the licensed psychologist will notify the physician of the circumstances that may require chemical restraint. Following consultation between the licensed psychologist and the licensed physician, chemical restraint shall only be implemented as a final option. (For further details see Louisiana's Guidelines for Behavioral Support; A Person Centered Approach).
 - (b) Chemical restraint shall only be used in response to a physician's order.
 - (c) A licensed physician must see and evaluate the need for chemical restraint within 1 hour of the intervention
 - (d) The physician shall establish a schedule for medical monitoring based on the ethics and standards of the medical profession. At minimum, this monitoring will include face-to-face monitoring by a staff person for a time period designated by the physician.
 - (e) Staff persons responsible for monitoring shall be provided detailed information to ensure effective monitoring. The physician shall direct medical staff to inform direct support staff of the potential side-effects of the medication prescribed for restraint.
 - (f) After the first instance of an unplanned chemical restraint, an interim plan must be developed by the next working day and approved by the chairpersons of the BIC and HRC.

- (g) Planned chemical restraint to control behavior shall be reviewed by the IDT, at minimum, every 90 days to consider the individual's response to chemical suppression and to consider treatment alternatives. This must involve a review of the behavioral data, data concerning medication side effects, progress towards long-term goals and other relevant factors.
- (9) The licensed psychologist may supervise an authorized designee to perform duties concerning the authorization of restraint. The psychologist's authorized designee must meet qualifications as defined in this policy.
- (10) The treating physician may supervise an authorized designee to perform duties concerning the authorization of restraint. The physician's authorized designee must meet qualifications as defined in this policy.

C. Alternate Procedures for Authorizing, Monitoring, and Evaluating Behavioral Restraints

The Office for Citizens with Developmental Disabilities (OCDD) recognizes that each agency is presented a unique set of circumstances and that there may be reasonable variations to the current policy that are beneficial to individuals we serve. Such variations in policy must be submitted and approved by the Assistant Secretary for OCDD and must include, at minimum, the following information:

- (1) limitations that the current policy may place on the consumer;
- (2) agency limitations on the use of restraint;
- (3) procedures for ensuring the safety of the individual including procedures for authorizing, monitoring, and evaluating behavioral restraint;
- (4) a description of methods expected to reduce or eliminate the need for restraint and any data available to support this conclusion;
- (5) procedures for training staff; and
- (6) the measured outcomes to be reported to OCDD

VII. PROCEDURES FOR THE USE OF MEDICAL RESTRAINT

Procedural regulations concerning the application of medical restraints are divided into two sections: (1) limitations on the use of medical restraint; and (2) procedures for monitoring and evaluating the use of medical restraint.

A. Limitations on the Use of Medical Restraint

- (1) Restraint procedures shall be applied with respect to the individual's rights as identified in the Consumer Rights section of this policy.
- (2) Prior to the implementation of a restraint, staff shall demonstrate competence in administering and documenting the restraint.
- (3) Restraint shall be selected only when:
 - (a) less restrictive measures have been found to be ineffective or are not medically indicated;
 - (b) the medical procedure requires immediate intervention and less intrusive approaches could not be attempted;
 - (c) restraint is standard for the medical procedure employed; or
 - (d) another medically valid rationale exists (describe).
- (4) Restraints shall never be written as a standing order or on an as needed basis (i.e., PRN).
- (5) Use of restraint(s) shall be incorporated into the individual's Individual Program Plan, if the need for restraint is anticipated by the Interdisciplinary Team (i.e., more than 3 episodes involving restraint in a 3 month period). This plan must include procedures for preventing the need for restraint, interventions, and a description of the specific restraint(s) to be used.
- (6) Planned restraints require informed consent, the approval of the Interdisciplinary Team (IDT), the Behavior Intervention Committee, and the Human Rights Committee (HRC). Approvals must consider the risks of restraint versus the risks of not using restraints and the appropriateness of the procedure as used in the plan. If unplanned restraints are required in rapid succession and there is a high likelihood of the need for further restraint before the standard approval procedures can be followed, an interim approval procedure must be followed. A written description of the interim approval procedure must be defined by each agency.
- (7) Prior to use of a restraint, the safety of the specific restraint shall be assessed by the individual's physician to determine whether medical contraindications for its use are present.

- (8) Medical restraints shall only be implemented with the authorization of the individual's treating physician, dentist, or podiatrist as permitted by the State of Louisiana and the agency to order restraint.
- (9) The treating physician, dentist, or podiatrist may supervise an authorized designee to perform duties concerning the authorization of restraint. The physician's authorized designee must meet qualifications defined in the Definitions section of this policy.

B. Monitoring and Evaluation of Medical Restraints

Authorized medical restraints allowed within the limitations specified in this policy are subject to the following standards concerning monitoring and evaluation.

- (1) Restraints require continuous visual monitoring and documented checks every 15 minutes by qualified direct care staff.
- (2) The individual's treating physician, dentist, or podiatrist shall conduct a direct examination and review within one hour.
- (3) Following the initiation of a personal or mechanical restraint, qualified medical staff shall, at minimum, check the individual's condition and the safety of the restraint within 15 minutes and each hour thereafter.
- (4) Attempts must be made to release individual's from mechanical restraints for a minimum of 10 minutes every hour, as necessary, to allow opportunities for exercise and restroom use, unless medically contraindicated.
- (5) Following each instance of restraint, the individual's treating physician, dentist, or podiatrist will review essential data including, at minimum, antecedent events, topography of the behavior, and consequences.
- (6) The frequency and use of medical restraints will be reviewed, at minimum, monthly by the agency's Behavior Intervention Committee and Human Rights Committee.
- (7) Additional Standards for Monitoring and Evaluating Unplanned Medical Restraint
 - (a) After each instance of restraint the individual's treating physician, dentist, or podiatrist will review, as soon as feasible, records identifying strategies attempted before restraint was applied, and the person's response to restraint.
 - (b) When unplanned medical restraints are used, reasonable attempts must be made to notify family or advocates within 24 hours.
 - (c) The use of unplanned medical restraints shall be reviewed by the person's Interdisciplinary Team as soon as possible, but not to exceed 3 days.

- (d) Each agency must have a policy/procedure for alerting psychology staff and QMRPs as to use of an unplanned medical restraint.
 - (e) If deemed necessary, pursuant to the professional judgment of the individual's treating physician, dentist, or podiatrist, a mechanical or chemical restraint may be applied.
- (8) The treating physician, dentist, or podiatrist may supervise an authorized designee to perform duties concerning the monitoring and evaluation of restraint. The physician's authorized designee must meet qualifications defined in the Definitions section of this policy.

C. Alternate Procedures for Authorizing, Monitoring, and Evaluating Medical Restraints

The Office for Citizens with Developmental Disabilities (OCDD) recognizes that each agency is presented a unique set of circumstances and that there may be reasonable variations to the current policy that are beneficial to individuals we serve. Such variations in policy must be submitted and approved by OCDD and must include, at minimum, the following:

- (1) limitations the current policy may place on the consumer;
- (2) agency limitations on the use of restraint;
- (3) procedures for ensuring the safety of the individual including procedures for authorizing, monitoring, and evaluating medical restraint;
- (4) a description of methods expected to reduce or eliminate the need for restraint and any data available to support this conclusion; and
- (5) procedures for staff training

VI. ORGANIZATIONAL PERFORMANCE EVALUATION

The Office for Citizens with Developmental Disabilities (OCDD) supports a service model that minimizes the need for restraint and maximizes safety for individuals served. An essential component of this goal is to establish a policy for evaluating the effectiveness of procedures for reducing and/or eliminating restraint at all levels of the current state system. This is the intent of the policy concerning performance evaluation.

- 2. At minimum, each agency shall document details concerning the application of a restraint to include:
 - (1) name of the consumer;
 - (2) identification number;

- (3) information clearly identifying the individual's residence such as home address, unit, facility, agency, and other pertinent information;
 - (4) identification of the type of restraint used;
 - (i) planned behavioral restraint
 - (ii) unplanned behavioral restraint
 - (iii) planned medical restraint; or
 - (iv) unplanned medical restraint
 - (5) identification of the method of restraint used;
 - (i) personal restraint (describe personal hold used)
 - (ii) mechanical restraint (describe device used) or
 - (iii) chemical restraint (specify medication prescribed)
 - (6) time of the restraint; and
 - (7) duration of the restraint.
3. Each agency shall maintain a database that enables the organization to pose queries and follow trends concerning the following data:
- (1) the number of behavioral episodes involving restraint per day, week, month, and year;
 - (2) the number of times each type of restraint is used per day, week, month, and year;
 - (3) the number of episodes involving restraint per individual, home, unit (if applicable), and agency; and
 - (4) the number of minor injuries, serious injuries, and deaths associated with restraint.
- C. The following data trends shall be reviewed by the agency's Behavior Intervention Committee and Human Rights Committee at least monthly:**
- (1) the number of behavioral episodes involving restraint per individual, home, unit (if applicable), and agency;
 - (2) the number of medical restraints per individual, home, unit (if applicable), and agency;
 - (3) the number of times each type of restraint is used (i.e., personal, manual, chemical);
 - (4) the number of minor injuries, serious injuries and deaths, if any, associated with restraint.

APPENDIX B
HAMMOND DEVELOPMENTAL CENTER
PHYSICAL RESTRAINT AUTHORIZATION AND RECORDING

PHYSICAL RESTRAINT AUTHORIZATION

Physical Restraint is authorized for _____ HDC# _____ Unit/Home _____
Date _____ from _____ (AM)(PM) to _____ (AM)(PM)

MANUAL RESTRAINT PSYCHOLOGY SIGNATURE _____	TIME: _____
RESTRAINT METHOD AUTHORIZED _____	
VERBAL REC'D FROM: _____	BY: _____ TIME: _____

MECHANICAL RESTRAINT PSYCHOLOGY SIGNATURE _____	TIME _____	
RESTRAINT DEVICE AUTHORIZED _____		
VERBAL REC'D FROM _____	BY: _____	TIME: _____

JUSTIFICATION: _____

SPECIAL INSTRUCTIONS: _____

For Mechanical Restraints, the individual must receive continuous visual monitoring. For safety, restraints must be inspected prior to each use.

- * If authorization is not by a physician, has medical release that the individual can withstand the stress of restraints been obtained? (Check One) Yes No
- Name of Physician signing medical release: _____
- Does the individual have a Behavior Support Program? (Check One) Yes No If yes, does plan include use of restraints? Yes (Manual Mechanical) / No
- Agency area in which order is to be used: Unit/Home Other (Specify location: _____)

PHYSICAL RESTRAINT RECORDING

Enter all actions of implementing and monitoring restraint below including: Type of Physical Restraint, Time In/Time Out and reason therefore, **15 minutes checks** of individual's physical condition **and** documentation of behavioral observations; and 1 hour exercise/toileting opportunities (5 minute lengths) during periods of restraint.

TIME	PHYSICAL CONDITION	BEHAVIORAL OBSERVATION	TYPE OF RESTRAINT	RECORDER

APPENDIX C
HAMMOND DEVELOPMENTAL CENTER ACCIDENT/INCIDENT REPORT DATA FORM

SECTION A: INDIVIDUAL REPORT (Report Number Computer Generated# _____)

Name: _____ HDC# _____ Unit/Home: _____ Date of Incident _____
 Witnessed or Discovered Time: _____ AM /PM Reported By: _____
 Nurse Notified: _____ Time: _____ AM /PM Report Line Called (495):
 Time _____ AM/PM
 Print Name

Description: _____

Other Witnesses and/or Persons Present: _____

POSSIBLE CAUSE: (Mark only one)

- | | | | | |
|---|---------------------------------------|--|------------------------------------|---|
| <input type="checkbox"/> Accident | <input type="checkbox"/> Elopement | <input type="checkbox"/> Unsafe Condition | <input type="checkbox"/> Provoked | <input type="checkbox"/> SIB(self-injurious behavior) |
| <input type="checkbox"/> Resulting From Seizure | <input type="checkbox"/> Staff Action | <input type="checkbox"/> Suspected Abuse/Neglect | <input type="checkbox"/> Assault | <input type="checkbox"/> PICA |
| <input type="checkbox"/> Other medical conditions | <input type="checkbox"/> Undetermined | <input type="checkbox"/> Suspected exploitation | <input type="checkbox"/> Combative | <input type="checkbox"/> Property Destruction |

LOCATION: (Mark only one)

- | | | | | | | |
|-------------------------------------|----------------------------------|---|--|--------------------------------------|---|----------------------------------|
| <input type="checkbox"/> Bedroom | <input type="checkbox"/> Kitchen | <input type="checkbox"/> Outdoor Rec Area | <input type="checkbox"/> Church/Chapel | <input type="checkbox"/> RTS Station | <input type="checkbox"/> Off Premises | <input type="checkbox"/> Unknown |
| <input type="checkbox"/> Living Rm. | <input type="checkbox"/> Canteen | <input type="checkbox"/> Indoor Rec Area | <input type="checkbox"/> Therapy Area | <input type="checkbox"/> Work/Job | <input type="checkbox"/> Outdoors | <input type="checkbox"/> Other |
| <input type="checkbox"/> Dining Rm. | <input type="checkbox"/> Laundry | <input type="checkbox"/> Medical Area | <input type="checkbox"/> Program Area | <input type="checkbox"/> Porch/Patio | <input type="checkbox"/> Inside Vehicle | <input type="checkbox"/> Break |
| <input type="checkbox"/> Bathroom | <input type="checkbox"/> Hallway | <input type="checkbox"/> Office Area | <input type="checkbox"/> School | <input type="checkbox"/> Sidewalk | <input type="checkbox"/> Visit Away with Family | |

SUSPECTED ABUSE/NEGLECT-CALL 486 Time: _____ AM/PM

INITIAL ACTION TO PREVENT SIMILAR OCCURANCE: _____

Completed By (Name and Title): _____ Date: _____ Time: _____ AM / PM

SECTION B: INITIAL ASESMENT/TREATMENT

ASSESSMENT/TREATMENT BY NURSE: _____

Provided By: RN LPN
 Care Required None
 First Aid of Less Required
 Emergency or Physician's Care Request

FOR MEDICATION ERRORS ONLY:		
<input type="checkbox"/> Wrong Person	<input type="checkbox"/> Wrong Admin.	<input type="checkbox"/> Omissions
<input type="checkbox"/> Wrong Dosage	<input type="checkbox"/> No MD order	<input type="checkbox"/> Wrong Treatment
<input type="checkbox"/> Wrong Time	<input type="checkbox"/> Transcription Error	<input type="checkbox"/> Wrong Medication
<input type="checkbox"/> Wrong Medications	<input type="checkbox"/> Documentation Error	<input type="checkbox"/> Punching Error
		<input type="checkbox"/> Packing Error

Referred to Physician Yes No If YES, referral for: Immediate Exam or Sick Call

PRIMARY BODY AREA: Left Right Both Sides Middle Internal Front Back Upper Lower

Specific Area of the Body (Mark only One) Not Applicable

- | | | | | | | | | | |
|-------------------------------------|-------------------------------------|---|------------------------------------|----------------------------------|----------------------------------|----------------------------------|--------------------------------|--------------------------------|---------------------------------|
| <input type="checkbox"/> Head/scalp | <input type="checkbox"/> Chin | <input type="checkbox"/> Nose | <input type="checkbox"/> Upper Arm | <input type="checkbox"/> Hand | <input type="checkbox"/> Breast | <input type="checkbox"/> Buttock | <input type="checkbox"/> Hip | <input type="checkbox"/> Shin | <input type="checkbox"/> Instep |
| <input type="checkbox"/> Face | <input type="checkbox"/> Mouth/lips | <input type="checkbox"/> Neck | <input type="checkbox"/> Elbow | <input type="checkbox"/> Finger | <input type="checkbox"/> Ribs | <input type="checkbox"/> Anus | <input type="checkbox"/> Thigh | <input type="checkbox"/> Ankle | |
| <input type="checkbox"/> Ear | <input type="checkbox"/> Tongue | <input type="checkbox"/> Collarbone | <input type="checkbox"/> Forearm | <input type="checkbox"/> Thumb | <input type="checkbox"/> Back | <input type="checkbox"/> Groin | <input type="checkbox"/> Knee | <input type="checkbox"/> Foot | |
| <input type="checkbox"/> Eyes | <input type="checkbox"/> Teeth | <input type="checkbox"/> Shoulder Wrist | <input type="checkbox"/> Chest | <input type="checkbox"/> Abdomen | <input type="checkbox"/> Genital | <input type="checkbox"/> Leg | <input type="checkbox"/> Heel | | |



PRIMARY TYPE OF INJURY (Mark only One) NO Injury Other: _____

Fracture Cut Hematoma Burn Scratch Irritation Strain Cracked Nail Infection
Dislocation Puncture Bruise Blister Abrasion Rash Sprain Missing Nail Pregnancy
Concussion Bite/Sting Knot/Bump Redness Chafed/Chap Sunburn Lesion Ingest STD
Heat Kick Razor Friction Bumped Into Foreign Object During Restraint
Human Bite/Scratch Fall Splinter Headbang Sports Chemical During Follow Down Animal Bite/scratch
Choke Insect Slip/Trip Pressure Twisted Arm Sexual Assault Medication Error Undetermined
Pinch Push Rub Hair Pull Stubbed Toe Sexual Contact During Escort/Transport

SERIOUSNESS OF INJURY: Non Apparent Minor Injury Serious Fatal

Signature/Title _____ Date: _____ Time: _____ AM/ PM

SECTION C: PHYSICIAN ASSESSMENT(TO be completed by Physician upon completion of Section B)

ASSESSMENT/TREATMENT BY PHYSICIAN: _____

Probably Cause of injury _____ Estimated Age of Injury: _____

PHYSICIAN'S RECOMMENDATIONS:

No restrictions Refer for Medical Consult Medical Orders Given (time Given: _____ AM/PM)
Return to Infirmary Admit to Infirmary
Refer to Hospital None Other: _____

Physician's Signature _____ Date: _____ Time: _____ AM/ PM
 Print Name _____

SECTION D: PROGRAM REVIEW

Suspected abuse/Neglect Major Injury Resulting in Fracture Unauthorized Departure Placing Individual or Others at Risk
Verbal abuse(Emot/Psycho) Major Injury Resulting in Sutures Major Injury Known to be Caused by Another Individual
Physical abuse Involuntary Sexual Contact among Individuals Suture Fracture Other Serious Injury
Extortion Death of Individual (Other Individual's #HDC _____)
Neglect Sensitive Situation
Exploitation Major Injury of Unknown
Sexual abuse all other major injuries
Report Line Contacted (486) Time: _____ AM/PM

Unauthorized departure Emergency restraints (Manual, Mechanical, Chemical) Minor Injury
Chocking are related to Nutritional management Individual to individual altercation with minor injury Medication Error
Life threatening emergency Individual to individual altercation with no injury No injury
Other individual's HDC# _____

FOLLOWUP ACTION: _____

SECTION E: DISPOSITION

DISPOSTION CLASSIFICATION: Minor Occurrence Incident Priority Incident
NOTIFICATION: _____ Date: _____ Time: _____ AM/PM
By whom: _____ **Follow Up:** _____

Bureau of Protective Services Child Protective Services Health Standards Section
Law Enforcement Referred for Administrative Review Investigation Initiated

Signature: _____ Date: _____ Time: _____ AM/PM

DATE OF REPORT AND PROCESS COMPLETED: _____
VALID ABUSE/NEGLECT: _____ **NO ABUSE/NEGLECT EVIDENT:** _____

VITA

Yemonja Smalls obtained her master's degree in psychology at Louisiana State University in 2000 under the tutelage of Johnny L. Matson, Ph.D., in pursuit of her doctorate in the clinical psychology program. She completed her internship at the Johns Hopkins School of Medicine, Kennedy Krieger Institute under Louis Hagopian, Ph.D., in 2002. She continues to strive to improve the services provided to individuals who are developmentally delayed, with continued focus on evaluation of policy, treatment design and of quality of life. Serving on the Illinois Psychology Task Force Committee, she seeks to continually refine systems. Yemonja is currently the Director of Psychological Services at Howe Center, a 450-bed ICF-MR state facility in Tinley Park, Illinois. The degree of Doctor of Philosophy will be conferred at the May 2004 Commencement ceremony.