# Use of Aversive and Restrictive Interventions in Behavioral Treatment

The purpose of this article is to discuss the educational, therapeutic, ethical and scientific context within which aversive and restricted procedures should be used and evaluated if indeed they are employed.

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**ABSTRACT:**
This article addresses the educational, therapeutic, and scientific context within which aversive and restrictive procedures should be used and evaluated if indeed they are employed. The guidelines proposed center on (a) the importance of informing the clients' parents and relatives, as well as the community, (b) the importance of providing staff training in how to apply nonaversive interventions, (c) the need for supervision by qualified colleagues as in peer-review, and (d) the need to take objective data to evaluate the positive and negative effects of aversive interventions, including long-term follow-ups. The article also discusses some similarities and differences between guidelines typically proposed by behavior analysts, and Norwegian regulations of aversive and restrictive methods.

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## Introduction

Individuals with developmental disabilities often present their parents and caregivers with aberrant behavior such as hitting, pinching, kicking or scratching (Green, O'Reilly, Itchon & Sigafoos, 2005). The behavior can be directed towards parents, siblings, or staff members, or it may be directed toward the client him-/herself, as in the case of self-injury. A recent Norwegian population study suggests that approximately 10 % of the learning disabled population in general and 20 % of the population under the age of 20 manifest severe challenging behavior (Holden & Gitlesen, in press). Needless to say, it is often necessary to decrease aberrant behaviors. Failure to do so may result in the need to medicate the clients, place them in physical restraints, and/or move them to more restrictive environments, curtailing the clients' educational and psychological growth.

«Aversive procedures are no longer allowed as a means to reducing the frequency of aberrant behavior, it is allowed only as a means to preventing severe damage»

Research has shown that methods derived from behavior analysis (Cooper, Heron, & Heward, 1987; Eikeseth & Svartdal, 2003) are effective in reducing aberrant behaviors. Some of these procedures involve aversive or restrictive components. The use of aversive and restrictive interventions have been strongly criticized in Norway, not least in Oslo-based newspapers (Kolset, 1999), as illustrated in Skouen's articles in *Dagbladet* (Skouen, 1976). For example, Skouen and others severely criticized the UCLA project for children with autism (Lovaas, 1993), but failed to describe the many safeguards and extensive peer review employed in that project. By leaving out these safeguards and warnings about the use of aversives, some providers may have been misled to proceed without these. If so, there is a need to improve the training of the service providers.

An early controversy over aversive and restrictive interventions in Norway dates back to the 1970s and became known as «the Gro case». This case was followed some years later by «the Sol case» (c.f., Eskeland & Syse, 1992). In the 1990s, staff at the psychology department at the University of Oslo was accused of employing aversive and restrictive procedures when treating a girl with Rett's Syndrome. Recently, a psychologist in private practice lost his psychologist license because of illegal and unethical use of aversive procedures (Dagbladet, 2003).

The purpose of this article is to discuss the educational, therapeutic, and scientific context within which aversive and restricted procedures should be used and evaluated, if indeed they are employed. It is hoped that this discussion will alert the reader to some of the ethical considerations as well as the complexities involved in using such procedures. Also, it is hoped that the discussion will help eliminate simplified notions of associations between behavior analysis and restrictive and aversive treatment.

## Behavior analytic understanding and treatment of self-injurious behavior

Before proceeding with the discussion of when aversive and restricted procedures may be used and evaluated, we will briefly present the current behavior analytic understanding of aberrant behavior and how factors increasing such behavior can be assessed. Finally, we will describe some of the existing alternatives to aversive and restrictive interventions.

## Causes of aberrant behavior

As far as it is known at this time, there are at least three main classes of functional relationships which may increase aberrant behavior (Carr, 1994). One is based on social

attention as in expressing concerns and affection to a client contingent on aberrant behavior (Carr & McDowell, 1980; Lovaas, Freitag, Gold, & Kassorla, 1965: Lovaas & Simmons, 1969; Richman & Hagopian, 1999) or on the favorite objects or activities the client may gain from parents and caregivers when engaging in aberrant behavior (Derby et al., 1992; Durand & Crimmins, 1988). In technical terminology, such behavior is «shaped» (taught) and maintained by positive reinforcement. A second functional relationship of aberrant behavior is based on the client's escape from an unpleasant situation, as in escape/avoidance learning, also known in behavioral literature as negative reinforcement (Carr & Newsom 1985; Carr, Newsom, & Binkoff, 1980; Cipani & Spooner, 1997). In this case, aberrant behavior may result in escape from unpleasant demands by therapists or teachers (Carr, Newsom, & Binkoff, 1976) or escape from unpleasant social situations (Taylor & Carr, 1992). A third form of relationship appears to be based on biological variables such as the sensory feedback provided by the aberrant behavior itself, as in self-stimulatory/ritualistic behaviors (Favell, McGimsey, & Schell, 1982) or on the endogenous opiates that may be released when the client engages in self-injurious behavior. The self-injury is said to produce a «natural high» (Barrett, Feinstein, & Hole, 1989; Cataldo & Harris, 1982).

So far, analysis of aberrant behavior has involved reinforcement contingencies only. However, motivational variables should also be included in this analysis (Holden, 2003a; Michael, 1982, 1993). One type of motivation is based on deprivation. For example, the client may be deprived of desired activities or objects, or he/she may be deprived of social attention. Social attention is a reinforcer primarily when the client lacks social attention. Thus, aberrant behavior to obtain social attention will probably occur less if the client is satiated on social attention. On the other hand, if the client is deprived of social attention, this motivational variable may be powerful enough to override reinforcement contingencies (at least temporarily). Clinically, this is seen when aberrant behavior persists for a long time in the absence of reinforcement (McGill, 1999).

Other motivational variables include aversive stimulation such as unpleasant demands or proximity to undesired persons. Finally, biological conditions may serve as motivational variables. Examples are sleep deprivation, allergic reactions, menstrual cycles, or physical discomfort (Holden, 2003a).

The complexity described above is further increased when a particular client engages in more than one form of aberrant behavior at any one time, and when contingencies which maintain the aberrant behavior change over time. Given this complexity, it is of paramount importance that service providers are able to determine the motivational variables and reinforcement contingencies causing the client's aberrant behavior (Holden, 2003b).

Accounts of aberrant behavior other than behavior analytic exist such as the disordered affective and social relations theory (Hobson, 1986, 1993), theory of mind (Baron-Cohen, 1995) or executive disorder theory (Russell, 1997). A review of these approaches, however, is beyond the scope of this article.

### Assessing causes of aberrant behavior

Behavior analysis possesses an extensive methodology for conducting functional analyses, that is, determining the cause of aberrant behavior. An experimental analysis involves manipulations of environmental variables, until factors influencing aberrant behavior are detected. This tradition was initiated by Iwata et al. (1982/1994). A descriptive analysis involves more naturalistic observations of the client. Finally, indirect analyses are based on interviews with staff and parents, and manuals and observational forms to be completed by those who interact with the client (Holden, 2003b; O'Neill et al., 1997). The methodology is expanding rapidly. One recent development is to include the client's own verbal influences on his or her aberrant behavior, if the client is verbally able.

### Alternatives to aversive and restrictive treatments

Fortunately, especially over the past two decades or so, several alternative strategies to reduce aberrant behaviors have been developed, and the number of studies employing aversive procedures has been reduced (Matson, Benavidez, Compton, Paclawskyj, & Baglio, 1996; Matson & Taras, 1989, Sulzer-Azaroff & Gillat, 1990). Rather than suppressing aberrant behaviors with restrictive and aversive interventions, alternative strategies have focused on replacing aberrant behaviors with appropriate communication skills (Carr & Durand, 1985; Durand, 1990; Eikeseth & Jahr, 2001). Another strategy is to reduce the motivation to show aberrant behaviors. This can be done, for example, by delivering reinforcers maintaining the aberrant behavior independent of the occurrence of this behavior, also referred to as noncontingent reinforcement (e.g. Carr, 1999). Motivation to exhibit aberrant behavior can also be reduced by eliminating aversive stimulation (Holden, 2003a).

Perhaps the most effective way of reducing or preventing aberrant behavior is by doing early and intensive behavioral treatment targeting a wide range of skills, including communication, social-emotional behaviors, play and leisure activities, academic skills and daily living skills (Lovaas, 2003). Greatest effects of this intervention have been achieved when (Lovaas, 2003):

(a) children less than 6–7 years old at the onset of treatment
(b) treatment is intensive (up to 30–40 hours per week) and long term (two years or more)
(c) parents have an active role in carrying out and designing intervention programs
(d) children have one-to-one relationships with therapists or teachers
(e) treatment occurs in children's natural environment (e.g., home or school)
(f) children are included in regular classes for non-disabled children

Research has shown that children who received intensive behavioral treatment display significantly fewer aberrant behaviors as compared to children receiving equally intensive special education treatment (Eikeseth Smith, Jahr & Eldevik, 2002, 2005).

## Restrictive and aversive interventions: Legislation and ethical guidelines

Basic features of Norwegian legislations for the use of aversive or restrictive interventions are presented, as are our proposed guidelines. Similarities and differences between Norwegian legislation and our proposed guidelines will also be discussed.

### Norwegian legislation

In 1994, the Norwegian Department of Social Services commissioned an assessment of the use of restrictive and aversive procedures in the treatment and care of persons with developmental disabilities. The commission found that such procedures were used at a relatively high rate, and that the use was often illegal and/or unethical. However, it was also determined that, under some conditions, the use of certain aversive and/or restrictive procedures may be appropriate to prevent severe damage and help the clients gain access to effective treatment. As a result, in 1996, a law was passed which allowed the use of some restrictive and aversive procedures in the treatment of individuals with developmental disabilities (Health services supervision act, Chapter 6A, implemented in 1999). Chapter 6A sparked considerable debate regarding the ethical and legal basis for using restrictive procedures (Eskeland & Syse, 1992; Osvold, 1996, 1997, 1998).

In 2004, Chapter 6A was revised, and replaced by Chapter 4A. One of the few, important, revisions is that aversive procedures are no longer allowed as a means to reducing the frequency of aberrant behavior, it is allowed only as a means to preventing severe damage. Consequently, reductions in the rate of aberrant behavior by aversive procedures can only occur as a side effect of damage prevention. For example, physical restraint may be used in order to prevent damage. However, physical restraint may also have aversive properties, which motivates the client to avoid it in the future. Hence the rate of aberrant behavior decreases.

Chapter 4A mandates that the decision to use restrictive procedures on a regular basis is made by the municipality which carries the care responsibility for the particular client. In addition, the decision has to be approved by the County's chief administrative officer («Fylkesmannen») before it can be implemented. In brief, restrictive procedures have to be ethically acceptable, procedures have to be generally accepted by the professional community, and other solutions must have been attempted, before they can be implemented. The client's caretakers and guardian («foreldre, hjelpeverge») must participate in the process before a decision is made. The law also states that those representing the client must be informed about their legal rights to appeal the decision. The county's regional habilitation service must assist in the development, execution, evaluation of the restrictive procedures, and attempts at finding other solutions. Also, the law mandates the County's chief administrative officer to overrule the decision to use restrictive procedures to ensure that the proposed treatment is carried out in accordance with the law. However, Chapter 4A only regulates the use of restrictive

procedures in relation to the delivery of care, mostly within residential homes and institutions, and not within families, kindergartens and schools.

### Proposed behavior analytic guidelines

Historically, behavior analysts have made several efforts to develop and improve ethical standards (the Behavior Analyst Certification board [http://www.bacb.com/]; Lovaas & Favell, 1987; Mørch, 2003; Van Houten et al., 1988; Wolf, 1978;), and many are older than current Norwegian law. The guidelines we propose, build on previous behavior analytic attempts, and will center on the importance of informing the clients' parents and relatives, as well as the community of the intent to use aversive or restrictive interventions. Further, they emphasize the importance of providing staff training in how to apply nonrestrictive interventions, as in teaching appropriate communication and other social skills, the need for supervision by qualified colleagues as in peer-review, the need to take objective data to evaluate the positive and negative effects of aversive interventions. This includes long-term follow-ups to assess whether the treatment did benefit the clients' social development rather than being restricted to short-term suppression which may invite repeated application of aversive or restrictive procedures and the likelihood of adaptation to pain or discomfort. Given the complexity inherent in whether or not to use restrictive or aversive interventions the following safeguards are prepared in evaluating whether or not to employ such interventions:

(1) *Nonrestrictive interventions have been attempted and documented ineffective.* It is essential that, before any steps are made, information is made available that nonrestrictive interventions have been attempted, but have failed to produce effects. This information must describe the client's behaviors in a quantitative way so it may be determined that the nonrestrictive interventions have failed to produce the desirable effects. In addition, the quality and quantity of the nonrestrictive treatment provided to the client must be assessed to evaluate treatment fidelity, that is, whether the treatment has been performed in a proper way (Gresham, Gansle, & Noell, 1993). Restrictive procedures must be considered only when it can be shown that lack of treatment effects occurs despite of proper use of nonrestrictive interventions.

(2) *Baseline data*. It is essential that baseline rates of aberrant behaviors are established before any restrictive interventions are started. This includes the assessment of aberrant behavior across different settings and personnel. There exists considerable technology regarding how to record behaviors, both invivo and based on videotaped sessions (Cooper et al., 1987). It is essential that reliability of recording is assessed routinely and properly. Data collection continues during treatment and at followup. In addition, data collection should be extended beyond aberrant behaviors to include assessments of emotional, social and other relevant behaviors using normed and standardized assessment instruments.

(3) *Informing caretakers*. The client's caretakers as well as the director of the particular facility must be informed about the proposed treatment. This involves a description of the treatment proposed, its data-base and the director's involvement in helping supervise the treatment. If the director is unable to provide supervision, then the director needs to designate a person to provide such supervision.
(4) *Informing the public*. All procedures should be subject to peer review. Any democratic institution would require that the society surrounding any one citizen be fully informed about the intent to use aversive or restrictive procedures given their powerful effects on shaping behavior. Peer review of the proposed treatment is essential before, during, and at follow-up.
(5) *Informed consent*. It is essential that a contract, in the form of an informed consent, is presented to, read and signed by the client or the client's caretakers or guardian (depending on age). The form should specify the nature of the intervention, why the intervention is being proposed and describe all potential benefits and risks associated with treatment. The UCLA Office for the Protection of Research Subjects consent form can be obtained by accessing the Internet (http://www.oprs.ucla.edu/human/TOC.htm).
(6) *Scientifically validated procedures*. The specific aversive or restrictive intervention which is proposed should be documented as to its effectiveness in prior research, ideally replicated by independent investigators. Unfortunately, some practitioners who consider themselves behavior analysts have abused behavioral methods, by employing «homemade» methods that are not scientifically validated. To illustrate; an intervention employed in Norway has been labeled «*Resistance Training*». So far as can be ascertained, the intervention has not been subjected to peer review and neither has the procedure been replicated to establish whether other providers can generate similar outcomes. Not only does peer review help protect the client against potential abuse but such review does also protect the service provider. If there are no data in journals with peer-review then the proposed intervention should not be approved. Rather it should be assumed that the intervention dos not exist and hence should not be used. Behavioral psychologists take pride in basing treatment on objective data. If this is compromised, the most essential basis of behavioral treatment is sacrificed.
(7) *Teaching alternative behaviors*. All treatments involving the use of aversive or restrictive interventions must include steps to ensure that effective and socially acceptable forms of communication are being taught. Facilities should *not* use aversive interventions if staff do not have training in teaching alternative behaviors, cannot be properly supervised and are not skilled in measurement and analysis of clinical data. This becomes important because many cases of aggressive behaviors represent a form of communication as in the client wanting to state «I want attention» or «I do not want these demands». Furthermore, the effects of restrictive or aversive interventions are likely to be short-lived unless staff is to establish and/or maintain socially acceptable forms of communication to replace the aggressive behaviors.

(8) *Medical assistance.* A physician should be on-call in case medical intervention is needed. This is of some urgency in cases where the client's behaviors deteriorate. Also, it is possible that certain pharmacological interventions may be more helpful and therapeutic than a behavioral one in reducing self-injury in some cases.
(9) *Social acceptable procedures.* If or when aversive or restrictive procedures are applied, they should *not* exceed levels that are acceptable within childrearing and education (Mørch, 2003).

**Concluding comments**

Needless to say, Norwegian law is superior, but guidelines such as the ones proposed can be helpful when they are compatible with the law. To a large extent, Chapter 4A and the proposed guidelines are compatible. Moreover, the proposed guidelines are more specific and more conservative than the Norwegian legislation (especially guideline 1, 2, 6, and 7), and hence may be helpful safeguards when evaluating whether or not to employ aversive or restrictive interventions or when designing such interventions. A difference between the Chapter 4A and the proposed guidelines, however, is that the proposed guidelines open for the use of aversive procedures to deliberately reduce aberrant behavior (if all requirements are fulfilled). Chapter 4A prohibits this. This difference, of course, is only relevant in settings where Chapter 4A does not apply.

«The proposed guidelines are more specific and more conservative than the Norwegian legislation»

We hope that the proposed guidelines will serve as a helpful tool for practitioners designing procedures under Chapter 4A, and for professionals and caregivers evaluating such procedures. Finally, the guidelines may be beneficial to professionals working in settings where Chapter 4A does not apply.

Within the last thirty years, behavioral psychology and special education have contributed in helping individuals with developmental disabilities to acquire the kinds of behaviors that allow them to function in more normal and less restrictive environments. If we project the development within the last thirty years onto the next thirty, we will probably observe major psychological and educational growth in the clients we try to help. For example, the increase in our knowledge of how to teach adaptive and socially competent behaviors will no doubt result in a concurrent decrease in maladaptive behaviors, as in the case of aggressive behaviors, whether self-injurious or directed towards others. As this occurs, there will likely be a decreasing need to consider restrictive and aversive interventions.

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