

# A Teacher's Checklist for Evaluating Treatment Intrusiveness

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*Teachers are frequently involved in developing and evaluating treatments for problematic behaviors. Along with other members of the interdisciplinary team, they must determine the level of intrusiveness that a treatment may have on a student. Several factors that influence the intrusiveness of treatment procedures are described. These factors were used to develop a checklist that could be used systematically by teachers to evaluate the intrusiveness of treatments recommended by treatment teams. After the checklist was administered to a group of preservice teachers, it was found to be capable of discriminating among several treatment options described in a series of case vignettes. The implications of incorporating such a checklist into the design and implementation of treatments for problem behavior are discussed.*

*Les enseignants sont souvent impliqués dans le développement et l'évaluation de traitements des problèmes de comportement. De concert avec d'autres membres d'une équipe interdisciplinaire, ils doivent déterminer dans quelle mesure un traitement est intrusif pour l'élève. L'article décrit plusieurs facteurs qui influencent le degré de discrétion des procédures. À partir de ces facteurs, on a dressé une liste de vérification dont pourraient se servir les enseignants de façon systématique pour évaluer à quel point les procédures recommandées par les équipes de traitement sont intrusives. La liste a été présentée à un groupe de stagiaires et s'est avérée capable de distinguer plusieurs options de traitement décrites dans une série de vignettes d'étude de cas. S'ensuit une discussion portant sur les conséquences d'incorporer une telle liste de vérification dans la conception et la mise en œuvre de traitements pour les problèmes de comportement.*

In discussing the least restrictive environment for children with severe disabilities, Brown et al. (2004) stated that specialized services for these students should be “delivered in as normal a fashion as possible” (p. 4). These specialized services include treatments developed to address challenging behaviors. Special education teachers and members of interdisciplinary teams are continually faced with making decisions about the appropriateness of interventions for reducing challenging behaviors of students with special needs. Team members make these decisions based on their past experiences with individual forms of intervention, the ease with which the treatment can be implemented, the potential efficacy of the interventions, the effect of the intervention on the student, and other factors. These decisions typically rely on a group-consensus approach about which intervention may be the most beneficial for the child, while attempting to eliminate any associated negative stigma or detrimental consequences to the child (Scott et al., 2005; Snell, Voorhees, & Chen, 2005). Although all these factors are important in determining the appropriateness of treatments, there is no consistent method for evaluating

how appropriate a specific treatment may be when implemented with a specific child. There appears to be a need to develop a systematic, objective method for evaluating the appropriateness of procedures developed by interdisciplinary teams that would ensure that all relevant areas of the child's environment are consistently considered.

The degree to which an intervention creates unwanted associations such as negative labels or consequences resulting in restrictions on activities or the potential for side effects may be considered the level of intrusiveness of an intervention (Jacob-Timm & Hartshorne, 1998). Although historically a significant amount of debate has centered on the use of intrusive and non-intrusive interventions (Repp & Singh, 1990), evidence suggests that interventions that are less intrusive tend to be considered more acceptable (Miltenberger, 1990). Intrusiveness is an important factor in the construct of the acceptability of treatment, and several measures have been developed and used to evaluate this (Carter, 2010). Although these measures can be reflective of respondents' ratings of how acceptable a specific treatment is considered, they may not accurately reflect the intrusiveness associated with a treatment. Intrusiveness may need to be examined separately from acceptability as other factors have been shown significantly to influence acceptability ratings such as (a) intrusive treatments being rated more acceptable when applied to more severe problem behaviors (Kazdin, 1980; Tingstrom, 1990); (b) acceptability varying based on the raters' characteristics or affiliations (Fairbanks & Stinnett, 1997; Miller & Kelley, 1992; Spreat & Walsh, 1994); or (c) the title of the person recommending the treatment (Carter, 2005). These findings indicate that treatments with the same degree of intrusiveness can have varying acceptability ratings depending on a number of factors unrelated to intrusiveness and suggest the need to measure this factor separately from acceptability.

Although there is some consensus in the literature on which treatments are more or less intrusive (Alberto & Troutman, 2003; Jacob-Timm & Hartshorne, 1998), the implementation of these procedures may vary widely when they are individualized to meet the unique needs often defined by a specific student, variable classroom settings, and experience levels of professionals. Once treatment procedures are individualized, the level of intrusiveness may change, and special education teachers and other team members must determine if the treatment has become more or less intrusive than other treatment options using either group consensus or expert opinion. In this article we describe a less subjective procedure for quickly and consistently determining the intrusiveness of treatments, even when they have been individualized for use with a particular student.

It is important for special education teachers to understand the level of intrusiveness of the treatments that they are recommending to address the challenging behaviors of their students. The intrusiveness of a treatment falls somewhere on a continuum from minimally intrusive to highly intrusive. Alberto and Troutman (2003) described a hierarchy of behaviour reduction procedures that begins with Level I procedures. These procedures are considered the most socially acceptable while having the lowest level of intrusiveness. The hierarchy ultimately progresses to Level IV procedures, which are associated with the least social acceptance and the highest level of intrusiveness. Interventions included in Level I are (a) differential reinforcement of alternative behaviors (DRA), (b) differential reinforcement of other behaviors (DRO), (c) differential reinforcement of low rates of behavior (DRL), and (d) differential reinforcement of incompatible behaviors (DRI). Level II interventions include extinction procedures that involve terminating reinforcement that was previously available to the student. Level III interventions include response-cost procedures (removing specific amounts of reinforcement contingent on problem behavior) and time-out procedures (denying a student the opportunity to receive

reinforcement for a fixed period). Level IV interventions are the most intrusive and include unconditioned aversive stimuli including presentation of stimuli that cause pain such as paddling or electric shock when a problem behavior occurs, conditioned aversive stimuli including presentation of stimuli such as oral warnings or yelling that have been previously associated with pain following the occurrence of a problem behavior, and overcorrection procedures such as exaggerated or extended practice of an appropriate behavior following occurrence of a problem behavior. Although this hierarchy provides a general continuum along which treatments may be evaluated, it does not allow for combinations of treatments representing the various levels to be examined, nor does it consider variations in the implementation of procedures. Several variables associated with the actual implementation of a specific treatment may also affect the level of intrusiveness of a treatment. These additional variables associated with the implementation of a specific treatment are described below with an explanation of how each may affect the intrusiveness of a treatment.

### **Setting**

The Individuals with Disabilities Education Act amendment (United States Congress, 1997) requires that students be educated in the least restrictive environment. A treatment that is designed to address the problem behavior of a student may be implemented in all the environmental settings to which a child has access, or it may be specified for use in a specific setting. Also, a treatment such as a time-out procedure could result in a child being placed in a setting other than his or her regularly scheduled least restrictive setting. The United States Department of Education (2002) outlines a continuum of least-to-most restrictive educational placements as follows, beginning with the least restrictive: general education classroom, resource classroom, separate classroom, separate school, residential facility, and home or hospital setting. Although this continuum was developed to guide placement decisions, it also provides a means for assessing the intrusiveness of treatments. Although a treatment may be frequently used in one of these placement settings, the same treatment may be used less frequently in other placement settings. It is important to take into consideration the intrusiveness of a treatment, not only as it relates to the student for whom the treatment is developed, but also as it pertains to the environment and other students in the setting (Scott et al., 2005). Although the benefits of the treatment to the student are most important, the potential for disrupting the environment or causing other students to ridicule or avoid the student should also be considered. Procedures considered highly restrictive have been found to be more acceptable when implemented in a more restrictive setting (Burgio et al., 1995). In general, the more restrictive placement where a treatment is used, the less intrusive the treatment is considered to be because restrictive procedures are more common to restrictive settings such as hospitals, homes, and residential facilities. Additional modifications to the school setting may also influence the intrusiveness of a treatment. Some treatments modify a student's typical environment by moving the student to a certain area of the room, placing barriers around a student's desk, or turning the student's desk in another direction or moving it to a new location. These types of treatments would be considered more intrusive than procedures that allow the student to remain in his or her usual seating position in the classroom.

### **Access to Materials and Activities**

The development of treatments to address challenging behavior should consider the effect that the treatment may have on a child's access to materials and activities that are available to other students in the school. The IDEA (2004) requires that students with disabilities be provided with opportunities to participate in school activities that include extracurricular activities both during and after school. If a treatment affects the level to which a child may have access to school materials or activities that would typically be available, then it may be considered intrusive. Treatments that offer access to supplemental materials or activities may be considered less intrusive than procedures that result in limited access or denial of access to these materials or activities (Jones, Eyeberg, Adams, & Boggs, 1998; Spreat & Walsh, 1994). In addition, the age-appropriateness of educational practices, which is a component of providing a child access to the least restrictive educational environment, may also influence the intrusiveness of a specific procedure. A treatment may be considered intrusive if it inhibits a child's access to materials or activities that are considered typical for other children of the same age.

### **Severity of Behavior Problem**

The intrusiveness of a treatment may be influenced by the severity of the problem it is intended to address. Reimers, Wacker, Cooper, and DeRaad (1992) determined a positive relationship between intrusiveness of a treatment and the severity of the problem behavior. They found that highly intrusive treatments were more acceptable when used to address severe behavior problems, and mildly intrusive treatments were more acceptable for addressing mildly problematic behaviors. A treatment may be considered less intrusive if it is used to address a severe rather than a mild behavior problem.

### **Organization of School Day**

The intrusiveness of a treatment may be determined by the degree to which it disrupts or interferes with a student's normal daily schedule. If a treatment can be implemented so as to allow the student to participate in all the scheduled activities in typical order, then it can be considered to cause minimal disruption to the organization of the student's school day. Some treatments may result in reorganizing a student's typical schedule whereas others may have little or no effect on the student's schedule. A treatment that rearranges a student's class schedule would be considered more intrusive than a procedure that did not interfere with the schedule. In addition, a treatment that reduces the amount of time that a student spends in school by having him or her arrive later or leave earlier than other students should be considered more intrusive than a treatment that does not result in a shortened school day. The measure of intrusiveness of treatment should only involve the degree to which it disrupts the student's daily schedule, rather than disruption to the teacher's schedule. The implementation difficulty experienced by a teacher does not necessarily change the intrusiveness of a treatment as experienced by a student. Although treatments that require significant amounts of time to implement or are difficult to implement are considered less acceptable (Witt, Elliot, & Martens, 1984), this should not be considered a factor of treatment intrusiveness because the focus should be on the disruptions experienced by the student.

### **Interactions with Peers**

The effect of a treatment on peers may be highly relevant to how intrusive it is perceived by a particular student. Some students may be highly sensitive to how their peers receive them if the peers are present when a particular treatment is implemented. Some treatments may be implemented without a student's peers being aware of it. Other treatments may be highly noticeable to peers or even recruit peers to participate in the treatments such as planned ignoring. Other treatments such as group designs may even cause peers to seek revenge against specific students who are responsible for the group losing a reward. The more influence a treatment has on a student's peers, the more intrusive it may be considered.

### **Previous Interventions Attempted**

Another factor influencing the intrusiveness of a treatment may be the order in which it is implemented in relation to other treatments. It may be considered more intrusive if it is the initial treatment that is implemented to address a problem behavior. The same treatment may also be considered less intrusive if it is implemented after other, less intrusive treatments have failed to address a problem behavior. Sprent and Walsh (1994) examined the variable of intrusiveness of treatment on acceptability by surveying members of the American Association of Mental Retardation (AAMR). The intrusiveness factors found to influence acceptability were restrictiveness of the proposed treatments and whether other procedures had been previously tried.

### **Based on a Functional Assessment**

Whether or not a treatment is based on a functional assessment of the behavior(s) in question may influence the intrusiveness of a treatment. Jones and Lungaro (2000) found that treatments that were linked to functional assessments were considered more acceptable than treatments that were not. These treatments are considered more likely to achieve successful results and may therefore be considered less intrusive (Ingram, Lewis-Palmer, & Sugai, 2005).

### **Replacement Behavior Present**

A treatment that contains a replacement behavior may be considered less intrusive because it contains a habilitative aspect. Treatments that contain a replacement behavior component allow students to obtain what they need (function) appropriately (form). Treatments that include this component not only attempt to reduce a problematic behavior, but also attempt to increase a more appropriate alternative behavior that serves the same function for the individual. Although treatments that include this additional component may be more complex, they may also be less intrusive because they involve a substantive opportunity for the student to learn a new, more appropriate skill.

### **Monitoring and Assessing Interventions**

With the implementation of an intervention, special education teachers should incorporate a monitoring system to determine the effectiveness of the intervention. With interventions that

are less intrusive, teachers may choose to incorporate a monitoring system that is less extensive than that used for a more intrusive intervention. An intervention that consists of reinforcing behaviors other than the target problem behavior may require only a simple method for recording the frequency or rate of the problem behavior. An intervention that involves a time-out procedure would need not only to record the frequency or rate of the problem behavior, but also the amount of time spent in time out as well as several other possible measurements. All interventions should involve methods for monitoring and assessing the effectiveness of an intervention that are precise enough to determine progress quickly and make modifications within a reasonable time. Special consideration should be given to interventions that are considered highly intrusive because these should have methods of monitoring and assessing that are equally intrusive to allow for immediate modifications (Feldman, Atkinson, Foti-Gervais, & Condillac, 2004).

In summary, the above literature review is not exhaustive, but reveals several areas of potential concern when one examines the intrusiveness of an intervention in a classroom setting. These areas include (a) influences on the setting where a student is placed, (b) influences on a student's access to materials and/or activities, (c) influences on how a student's school day is organized, (d) the severity of the problem behaviors and influences on how a student interacts with peers, (e) the previous interventions that have been used to address the problem behaviors, (f) if the intervention is based on a prior functional assessment, (g) if a replacement behavior is incorporated as part of the intervention, and (h) the level of monitoring and assessment of the intervention that is developed. Based on the literature review, each of these areas was considered a potential influence on the intrusiveness of classroom interventions and used for the purposes of this study.

Our purpose in this study was to develop a systematic protocol for evaluating the intrusiveness of school-related behavioral treatments. The criteria for determining the least restrictive environment by Brown et al. (2004) were used to develop the evaluation instrument. The instrument was intended to be used by school personnel and others such as parents, family members, peers, and so forth. The information obtained from the instrument might be used to compare the intrusiveness of various treatments or be useful for modifying existing treatments in order to make them less intrusive.

## **Method**

### **Participants**

The research participants were 40 college students enrolled in an education course from two large southern universities. Participants ranged in age from 20 to 49 years old ( $M=30.39$ ,  $SD=8.43$ ). Seven (17.5%) were men, 32 (80%) were women, and one (2.5%) participant did not indicate sex. Thirty-eight participants were Caucasian (95%), one (2.5%) was Hispanic, and one (2.5%) did not specify ethnicity. Participants included 23 (57.5%) students and 17 (42.5%) who were both students and professionals. Participants' classifications comprised seven (17.5%) juniors, three (12.5%) seniors, 29 (72.5%) graduate students, and one (2.5%) who did not report a classification. Most participants had majored in special education (77.5%). The other majors reported were curriculum and instruction, early childhood, educational psychology, elementary education, exceptional learning, and school psychology. The professional titles were behavior specialist, program coordinator, resource specialist, special education teacher, general education

teacher, and teaching assistant. When participants were asked if they had worked with individuals with developmental disabilities, 38 (95%) said *yes* and two (5%) said *no*. When asked if they had an educational/psychological/behavioral certification/licensure, 14 (35%) said *yes* and 26 (65%) said *no*. The areas of licensure reported were elementary education, general education (k-8), history, physical education, special education, and secondary education. When asked the total number of hours or years spent observing or working with individuals with developmental disabilities, one (2.5%) reported 0 hours, one (2.5%) reported 1-10 hours, eight (20%) reported 10 or more hours, 21 (52.5%) reported 1-5 years, seven (17.5%) reported 6-10 years, and two (5%) reported more than 10 years of experience. Participants did not receive instruction on the use of the instrument before this study.

### **Development of the School Treatment Intrusiveness Checklist (STIC)**

In order to develop a method for teachers to evaluate the intrusiveness of a treatment systematically while reducing the level of subjective input, the School Treatment Intrusiveness Checklist (STIC) was devised by the second author (see Appendix). A series of yes/no questions were derived from the above literature review of factors that appeared to influence the intrusiveness of treatments. These questions were intended to determine the presence or absence of specific factors considered relevant to the intrusiveness of a treatment. We chose the yes/no format for responding in order to limit the amount of respondents' subjective input. Recognizing the presence or absence of situations that might result in treatment intrusiveness was considered more relevant than raters' subjective opinions about how influential a specific situation may be toward treatment intrusiveness. These questions were used to design a checklist that could be used by teachers to evaluate the degree of intrusiveness associated with a treatment for a student with either mild or severe disabilities. The checklist is intended to be used before or during the implementation of a treatment. The rater answers yes/no questions about the treatment across the various areas that may influence the intrusiveness of treatment. The numbers of *yes* responses are tallied across all areas of the checklist, and this cumulative figure refers to the absence of intrusiveness associated with the treatment being rated. The cumulative number of *no* responses across all the areas of the checklist refers to the presence of intrusiveness in the treatment being evaluated. These cumulative scores may then be converted to percentages and interpreted for students with mild/moderate disabilities or for students with severe/profound disabilities. The various score interpretations incorporate aspects of treatment acceptability that frequently demonstrate more acceptance of intrusive treatments when used with students who have more severe disabilities or who display more severe challenging behavior.

The checklist is also designed to allow for modifications to interventions to be made in order to reduce the intrusiveness of a treatment. By examining each question that was scored in column 1 and taking steps to alter the intervention to allow the question to be scored in column 2, the overall intrusiveness rating can be reduced. Some examples of this might involve (a) conducting a functional behavioral assessment where one has not been previously conducted, (b) incorporating appropriate replacement behaviors, or (c) removing barriers or obstacles associated with implementation of the intervention.

## **Case Descriptions**

A total of five case vignettes were developed using descriptions provided by earlier studies of treatments for effectively reducing challenging behaviors. The vignettes consisted of case descriptions of a school-aged child and a treatment to address aggressive behavior. The case descriptions referred to school-aged children who displayed aggression (hitting others and spitting on people), destroying property, and tantrums. Two versions of the case descriptions were developed by randomly manipulating five specific variables concerning the case. Multiple versions of the case descriptions were deemed necessary to examine whether variables not typically associated with treatment intrusiveness would influence raters' responses. The case description variables that were manipulated included (a) the age of the student (6-years-old vs. 16-years-old), (b) the level of intellectual disability (mild vs. severe), (c) the severity of the aggressive behaviors (mild vs. severe), (d) information on previous interventions (previous treatments ineffective vs. no previous treatment), and (e) functional assessment information (treatment based on functional assessment vs. no functional assessment).

The treatments described were functional communication training, time out with physical restraint, extinction, positive reinforcement, and token economy. The functional communication training treatment was based on procedures described by Frea, Arnold, and Vittimberga (2001). The time-out procedure with physical restraint and the extinction procedure were based on procedures described by Olmi, Sevier, and Nastasi (1997) and Luiselli, Suskin, and Slocumb (1984). The positive reinforcement procedure was based on methods described by Lalli and Casey (1996), and the token economy was based on procedures described by LePage et al. (2003). The treatments were presented as recommendations for the treatment of the aggressive behavior described in each vignette.

## **Experimental Procedures**

The participants were provided with a packet containing five case descriptions, five copies of the STIC, and instructions for completing the packet. They were informed that their responses would remain confidential and that information collected would not be identifiable by name. Participation was voluntary, and no incentive was used to solicit participation in the study. The ordering of the case descriptions was randomized in each packet to avoid order effects, and the participants were instructed to complete the packets from front to back without returning to any previously read case descriptions. Participants were told to read each case description and then immediately respond to all the items on the STIC using only the information provided in the case description. They were told not to extrapolate on the information contained in the case descriptions, but rather to consider any missing information as not influential to the intrusiveness of the treatment. Participants were informed that they did not need to tally their responses, but simply to respond to each item and then move on to the next category of items. In order to provide a measure of instructional compliance associated with completing the packets, participants were instructed to underline each occurrence of the name of the student associated with each case description.



Table 1  
Descriptive Statistics for Each Condition

Condition	Mean	SD	Range	Minimum	Maximum
Extinction	15.72	7.09	33.00	2.00	35.00
FCT	11.44	6.47	26.00	.00	26.00
Time-out	17.28	6.29	22.00	9.00	31.00
Positive Reinforcement	11.15	6.87	32.00	.00	32.00
Token Economy	12.92	7.71	32.00	2.00	34.00

## Results

### Reliability

Of the completed packets, 20% were randomly selected and checked independently by two reviewers for compliance with instructions. They categorized the checklists as instructionally compliant or instructionally noncompliant with 100% agreement and determined that 75% of the checklists reviewed were completed as the instructions stated. Internal consistency was considered appropriate based on an overall Cronbach  $\alpha$  of .86 for items on the instrument.

### Data Analysis

Descriptive statistics revealed that the time-out treatment procedure had the highest mean ( $M=17.28$ ,  $SD=6.29$ ), and positive reinforcement had the lowest mean ( $M=11.15$ ,  $SD=6.87$ ). Descriptive statistics are presented in Table 1 (higher means represent increased levels of treatment intrusiveness).

Multiple  $t$ -tests were conducted to determine differences between the two variations of each case description. No statistical differences were found between the various versions of the case descriptions. A repeated-measures ANOVA was used to analyze the data from the rating scales to determine statistically significant differences among the treatment conditions. The repeated-measures ANOVA is typically used to test the equality of means when two or more responses from a single individual are provided (Hair et al., 1998). There was a significant difference among the ratings for the treatment conditions [ $F(1, 38)=193.86$ ,  $p<.000$ ]. The results of the repeated measures ANOVA are presented in Table 2.

Table 2  
Repeated Measures Analysis of Variance

	Sum of Squares	df	mean square	F	Sig.	$\eta^2$
Linear	36613	1	36613	193.86	.000	.836
Error	7176	38	188.85			

Table 3  
Tukey HSD Post Hoc Test

Treatments	Means	Mean Differences	Outcome	Cohen's <i>d</i>
Extinction – FCT	15.71 - 11.44	4.27	$p < .05$	.630
Extinction – Time out	15.71 - 17.28	1.57	ns	
Extinction – Positive Reinforcement	15.71 - 11.15	4.56	$p < .05$	.653
Extinction – Token economy	15.71 - 12.92	2.79	ns	
FCT – Time out	11.44 - 17.28	5.84	$p < .05$	.915
FCT– Positive Reinforcement	11.44 - 11.15	.29	ns	
FCT – Token economy	11.44 - 12.92	1.48	ns	
Time out – Positive Reinforcement	17.28 - 11.15	6.13	$p < .05$	.930
Time out – Token economy	17.28 - 12.92	4.36	$p < .05$	.619
Positive Reinforcement - Token economy	11.15 - 12.92	1.77	ns	

Note. Tukey HSD=3.93.

A Tukey HSD post-hoc test was conducted to determine specific mean rating differences among the treatments. This post-hoc test was chosen because it has been shown to have greater power for controlling Type I error than most post-hoc tests (Myers & Well, 2003). Comparing the Tukey HSD of 3.39 with the mean score differences among the treatment conditions resulted in significant differences (See Table 3). Cohen's *d* computed for treatments found to have significant mean differences revealed medium to large effect sizes.

The time-out procedure received significantly higher treatment intrusiveness ratings than all other treatments except the extinction procedure. This was found to have significantly higher treatment intrusiveness ratings than the FCT procedure and the positive reinforcement procedure. No other mean score differences were found to be significant.

## Discussion

The mean ratings differences of treatment intrusiveness among the five treatments demonstrated that the raters were capable of using the STIC to differentiate degrees of treatment intrusiveness. In addition, diverse versions of the case descriptions were not found to have a significant influence on raters' responses. This provides support for a rationale that the differences in ratings were not based on factors related to the case description, but were instead dependent on factors related to the treatment. This is important because the instrument was designed to measure the intrusiveness of a treatment regardless of the characteristics associated with the individual for whom the treatment was targeted. The case description variables that provided information on earlier treatments or based the treatment on a functional assessment could have made a treatment appear less intrusive, but these related factors did not change the intrusiveness of the treatment procedures that were the primary focus of this instrument.

The positive reinforcement treatment received the lowest mean treatment intrusiveness rating followed by the functional communication training treatment. Both of these treatments were described as focusing primarily on reinforcing appropriate behaviors rather than punishing inappropriate behaviors. The token economy treatment primarily focused on

reinforcing appropriate behaviors, but also involved punishing inappropriate behaviors. The incorporation of a punishment procedure in the token economy may explain why the intrusiveness ratings were only significantly different compared with the time-out treatment. The extinction treatment and the time-out treatment both primarily focused on reducing inappropriate behaviors with minimal focus on reinforcing appropriate behaviors. The reason the time-out treatment was rated significantly higher in intrusiveness than all the treatments other than extinction may have been because the time-out treatment clearly focused on punishing the inappropriate behavior without any clear use of reinforcement. The extinction treatment may have most resembled the time-out treatment because it provided no clear method for reinforcing appropriate behavior. One conclusion that can be drawn from these results is that treatments that clearly emphasize reinforcement of appropriate behaviors tend to be considered less intrusive than treatments that also focus on reducing inappropriate behaviors or exclusively focus on reducing inappropriate behaviors.

The ratings of treatment intrusiveness are similar to the hierarchy of intrusiveness described by Alberto and Troutman (2003). Both the positive reinforcement treatment and the FCT treatment can be considered Level I treatments according to Alberto and Troutman's hierarchy, and these treatments received the lowest ratings of intrusiveness from the participants. The token economy treatment received the third lowest rating of intrusiveness from the participants. This treatment combined a Level I treatment and a Level III treatment. The time-out treatment received the highest intrusiveness rating from the participants, which corresponds to a Level III or a Level IV, because the treatment included physical restraint and could potentially cause pain. The ratings by participants for the extinction treatment appear to differ from the Alberto and Troutman (2003) hierarchy, which places extinction as a Level II treatment. The participants in this study rated the extinction treatment similarly to the time-out treatment, indicating that they considered it one of the most intrusive treatments.

Several reasons could account for the discrepancy between Alberto and Troutman's (2003) hierarchical placement of extinction and the ratings by the participants in this study. First, the participants might consider this treatment more intrusive due to the lack of emphasis on reinforcing appropriate behaviors. Second, the description of the extinction treatment may have failed to provide enough information for adequate rating of the intrusiveness of the treatment. Third, the rating instrument may inaccurately cause participants to rate the extinction procedure as more intrusive than the general consensus on the intrusiveness of extinction.

The participant sample for this study was limited on a number of variables such as culture, geography, and gender, which are important factors that need to be considered for further evaluation of the usefulness of the STIC. Other limitations of this study include the limited number of treatment options that were evaluated by the participants. Numerous treatments are implemented in school settings, and future research should consider examining the use of the STIC with various treatment options. The treatment scenarios used in this study were selected in order to cover the possible levels of intrusiveness described by Alberto and Troutman (2003). Another limitation was that the STIC addresses only a limited number of possible categories that might be influential on determining the intrusiveness of a treatment. Although the development of these categories was based on the article by Brown et al. (2004), other questions relative to a specific category could be included, or additional categories could be added. The questions chosen for inclusion in this instrument were considered the most highly relevant for evaluating the intrusiveness of a treatment as well as attempting to cover a wide variety of common school-related situations. The results of this study and the instrument developed should be considered

a promising practice, although subsequent research is needed to provide additional evidence on the usefulness of the instrument in practice. Although most of the participants (57.5%) were preservice teachers, 95% indicated experience with individuals with disabilities, and 75% of those participants indicated one or more years spent working with and/or observing individuals with disabilities. Essentially, the participants in this study were considered to cover a wide range of experience, which allowed for examination of the instrument across participants with varying backgrounds.

The aim of this study was to develop a systematic protocol for evaluating the intrusiveness of school-related behavioral treatments based on the criteria set forth by Brown et al. (2004) for delivering services as normally as possible. Completion of the STIC allows raters or those responsible for treatment design and implementation to make adjustments to treatments according to the responses to the questions on the STIC. The scores obtained can be used for comparing the intrusiveness of various treatments with higher scores, representing higher levels of treatment intrusiveness. We hope that the use of an instrument for conducting these types of evaluations will also allow more consistent determinations of treatment intrusiveness. In addition, we hope that the use of this type of instrument may allow those responsible for selecting and implementing behavioral treatments in schools to identify instances where treatments may be unnecessarily intruding on students, which could allow for modifications to minimize the overall degree of treatment intrusiveness and increase the quality of life. Although the use of the protocol described in this study does not ensure that the least intrusive intervention will be implemented in any given situation, the protocol does allow for systematic evaluation of relevant variables related to the intrusiveness of an intervention. Many novice teachers do not have the experience to allow them thoroughly to evaluate the potential intrusiveness of a treatment without some support. This instrument provides a structured protocol that teachers can incorporate to enhance their ability adequately to evaluate the intrusiveness of interventions and promote the least restrictive environments for their students. We hope that the incorporation of a systematic protocol for evaluating treatment intrusiveness will increase the use of less intrusive interventions, especially when compared with the use of unsystematic methods or no evaluation methods.

Future research should examine the use of this type of checklist as part of the decision-making process of school-based teams when designing and evaluating treatments for challenging behavior. Some specific aspects to consider might include the influence of such a checklist on reducing the number of intrusive treatments or the degree of intrusiveness among existing treatments. In order to conduct a comprehensive examination of the intrusiveness of a specific intervention, all aspects related to an intervention should be considered along with the perspectives of all stakeholders associated with the intervention. The STIC offers a structured approach for educational teams to discuss and work to minimize the various aspects of intrusiveness associated with an intervention. The amount of time required to complete the instrument and the type of language that is used in the instrument are some areas that may require additional research in order to make the instrument more time-efficient and understandable to individuals with various backgrounds such as parents, peers, other school personnel, and so forth. Additional areas of research might involve (a) the usefulness of such a checklist for resolving disagreements over degrees of treatment intrusiveness, (b) influences on promoting the least restrictive environment, and (c) the use of such a checklist with parents of children with challenging behaviors.

## References

- Alberto, P.A., & Troutman, A.C. (2003). *Applied behavior analysis for teachers* (6th ed.). Englewood Cliffs, NJ: Merrill.
- Brown, L., Wilcox, B., Sontag, E., Vincent, B., Dodd, N., Gruenewald, L. (2004). Toward the realization of the least restrictive educational environments for severely handicapped students. *Research and Practice for Persons with Severe Disabilities*, 29, 2-8. (Reprinted from *American Association for the Education of the Severely/Profoundly Handicapped Review*, 2(4), December, 1977).
- Burgio, L.D., Cotter, E.M., Stevens, A.B., Hardin, J.M., Sinnott, J., & Hohman, M.J. (1995). Elders' acceptability ratings of behavioral treatments and pharmacotherapy for the management of geriatric behavioral disturbances. *The Gerontologist*, 35, 630-636.
- Carter, S.L. (2005). College students' acceptance of potential treatments for ADHD. *Psychological Reports*, 97, 258-264.
- Carter, S.L. (2010). *The social validity manual: A guide to subjective evaluation of behavior interventions*. San Diego, CA: Elsevier.
- Fairbanks, L.D., & Stinnett, T.A. (1997). Effects of professional group membership, intervention type and diagnostic label on treatment acceptability. *Psychology in the Schools*, 34, 329-335.
- Feldman, M.A., Atkinson, L., Foti-Gervais, L., & Condillac, R. (2004). Formal versus informal interventions for challenging behavior in persons with intellectual disabilities. *Journal of Intellectual Disability Research*, 48, 60-68.
- Frea, W.D., Arnold, C.L., & Vittimberga, G.L. (2001). A demonstration of the effects of augmentative communication on the extreme aggressive behavior of a child with autism within an integrated preschool setting. *Journal of Positive Behavior Interventions*, 3, 194-198.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate Data Analysis* (5th Edition). Upper Saddle River, NJ: Prentice Hall.
- Individuals with Disabilities Education Act of 2004, P.L. 108-446.
- Ingram, K., Lewis-Palmer, T., & Sugai, G. (2005). Function-based intervention planning: Comparing the effectiveness of FBA function-based and non-function-based intervention plans. *Journal of Positive Behavior Interventions*, 7, 224-236.
- Jacob-Timm, S. & Hartshorne, T.S. (1998). *Ethics and law for school psychologists* (3rd ed.). New York: Wiley.
- Jones, M.L., Eyberg, S.M., Adams, C.D., & Boggs, S.R. (1998). Treatment acceptability of behavioral interventions for children: An assessment by mothers of children with disruptive behavior disorders. *Child and Family Behavior Therapy*, 20(1), 15-26.
- Jones, K.M., & Lungaro, C.J. (2000). Teacher acceptability of functional assessment-derived treatments. *Journal of Educational and Psychological Consultation*, 11, 323-332.
- Kazdin, A.E. (1980). Acceptability of alternative treatments for deviant child behavior. *Journal of Applied Behavior Analysis*, 13(2), 259-273.
- Lalli, J.S., & Casey, S.D. (1996). Treatment of multiply controlled problem behavior. *Journal of Applied Behavior Analysis*, 29, 391-395.
- LePage, J.P., DelBen, K., Pollard, S., McGhee, M., VanHorn, L., Murphy, J., Lewis, P., Aboraya, A., & Mogge, N. (2003). Reducing assaults on an acute psychiatric unit using a token economy: A 2-year follow-up. *Behavioral Interventions*, 18, 179-190.
- Luiselli, J.K., Suskin, L., & Slocumb, P.R. (1984). Application of immobilization time-out in management programming with developmentally disabled children. *Child and Family Behavior Therapy*, 6, 1-15.
- Miller, D.L., & Kelley, M.L. (1992). Treatment acceptability: The effects of parent gender, marital adjustment, and child behavior. *Child and Family Behavior Therapy*, 14(1), 11-23.
- Miltenberger, R.G. (1990). Assessment of treatment acceptability: A review of the literature. *Topics in Early Childhood Special Education*, 10, 24-38.

- Myers, J. L., & Well, A. D. (2003). *Research design and statistical analysis*. Mahwah, NJ: Erlbaum.
- Olmi, D.J., Sevier, R.C., & Nastasi, D.F. (1997). Time-in/time-out as a response to noncompliance and inappropriate behavior with children with developmental disabilities: Two case studies. *Psychology in the Schools, 34*, 31-39.
- Reimers, T.M., Wacker, D.P., Cooper, L.J., & DeRaad, A.O. (1992). Acceptability of behavioral treatments for children. *School Psychology Review, 21*, 628-643.
- Repp, A.C., & Singh, N.N. (1990). *Perspectives on the use of nonaversive and aversive interventions for persons with developmental disabilities*. Sycamore, IL: Sycamore Publishing.
- Scott, T.M., McIntyre, J., Liaupsin, C., Nelson, C.M., Conroy, M., & Payne, L.D. (2005). An examination of the relation between functional behavior assessment and selected intervention strategies with school-based teams. *Journal of Positive Behavior Interventions, 7*, 205-215.
- Snell, M.E., Voorhees, M.D., & Chen, L. (2005). Team involvement in assessment-based interventions with problem behavior: 1997-2002. *Journal of Positive Behavior Interventions, 7*, 140-152.
- Spreat, S., & Walsh, D.E. (1994). Impact of treatment efficiency and professional affiliation on ratings of treatment acceptability. *Mental Retardation, 32*, 227-233.
- Tingstrom, D.H. (1990). Acceptability of time-out: The influence of problem behavior severity, interventionist, and reported effectiveness. *Journal of School Psychology, 28*, 165-169.
- United States Department of Education. (2002). *Twenty-fourth annual report to Congress on the implementation of the Individuals with Disabilities Education Act*. Washington, DC : Author.
- United States Congress. (1977). Individuals with Disabilities Education Act amendments of 1997, 20, § 1401 (26).
- Witt, J.C., Elliot, S.N., & Martens, B.K. (1984). Acceptability of behavioral interventions used in classrooms: The influence of amount of teacher time, severity of behavior problem, and type of intervention. *Behavioral Disorders, 9*, 95-104.

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Appendix

**School-Based Treatment Intrusiveness Checklist (STIC)**

**Rater:** \_\_\_\_\_ **Individual Rated:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**INSTRUCTIONS:**

Review each parameter as proposed for or implemented in the individual's program. Circle either YES or NO to indicate whether each specified program component is or will be present. For each section or only the section(s) of your choice, sum the YES and NO responses.

**I. Best Practice Intervention Development**

As in every section of this checklist, column 1 represents the presence of more intrusive treatments, and column 2 represents the absence of such treatments. Thus, a greater total (and percentage) in column 1 of this section would indicate that the balance of prescribed treatments regarding educational setting is tipped more toward intrusiveness than non-intrusiveness.

1	Current levels of treatment were introduced only after less intrusive / lower levels of treatment were attempted and found to be ineffective.	NO	YES
2	The student's current treatment package was based upon the results of a functional behavior assessment and/or a functional analysis.	NO	YES
3	The student's current treatment package includes positive methods for reduction of problematic behavior.	NO	YES
4	The student's current treatment package includes methods for teaching and maintaining replacement / appropriate alternative behavior(s).	NO	YES
		Column 1 Total	Column 2 Total

**II. Setting**

1	The restrictiveness of the student's placement (i.e., general education classroom, resource room, separate classroom, separate school, residential facility, home or hospital) seems to match the restrictiveness of the procedures used there. For instance, the use of highly restrictive procedures in a resource room would prompt a NO response.	NO	YES
2	The student's seat has been moved to another area of the room or oriented in a different direction than the seats of other students.	YES	NO
3	Some form of barrier has been placed around or beside the student's desk.	YES	NO

4	Has a plan been formulated to ensure that the student will not remain in a restrictive environment?	NO	YES
5	The student's exposure to non-disabled models of student life is or will be absent or minimal.	YES	NO
6	School personnel are primarily focused on controlling for challenging behavior.	YES	NO
7	School personnel are primarily involved in the provision of training and opportunities for functional integration.	NO	YES
8	The presence of architectural barriers limits the physical areas that the student can travel in or through.	YES	NO
9	The student spends most of his or her time (e.g., more than half) in an integrated setting with students who are disabled and non-disabled.	NO	YES
Column Totals		Column 1 Total	Column 2 Total

### III. Interactions

1	The number of social interactions within the student's educational experience are representative of those that will take place in integrated, heterogeneous communities after the student leaves school.	NO	YES
2	The quality of social interactions within the student's educational experience are representative of those that will take place in integrated, heterogeneous communities after the student leaves school.	NO	YES
3	The types (e.g., involving people without disabilities) of social interactions within the student's educational experience are representative of those that will take place in integrated, heterogeneous communities after the student leaves school.	NO	YES
4	The non-disabled students with whom the student interacts are of approximately the same chronological age as him / her.	NO	YES
5	Does the student receive social skills training commensurate with his / her level of adaptive behavior in the social domain? (If no need for such training exists, and the student does not receive it, circle YES.)	NO	YES
6	Do barriers to interaction exist, such as lack of structured opportunities that have not been effectively addressed / removed?	YES	NO
		Column 1 Total	Column 2 Total



**IV. Curriculum**

- |   |  |     |     |
|---|--|-----|-----|
| 1 | Is <i>what</i> the student learns comparable to that learned by typical students (within generalized limits, i.e., math but not necessarily Calculus), even though <i>how</i> the student learns it may be markedly different?                   | NO  | YES |
| 2 | Is the focus of the student's curriculum on preparing him or her for independent functioning in environments apart from school, such as home and community?  | NO  | YES |
| 3 | Are the student's learning objectives appropriate for his or her chronological age?  | NO  | YES |
| 4 | Do behavioral concerns and/or interventions take precedence over or preclude the teaching and/or practice of needed skills? (i.e., "We cannot teach him to implement social skills training because he might behave poorly in front of others.") | YES | NO  |
| 5 | The student has equal access to enrichment and/or community / "out of class" opportunities that promote the maintenance and generalization of classroom learning.  | NO  | YES |

Column 1 Total	Column 2 Total
-------------------	-------------------

**V. Organization of the School Day**

- |   |   |     |     |
|---|---|-----|-----|
| 1 | Is a school-sanctioned arrangement in place allowing the student to arrive at school later and/or leave earlier than his/her non-disabled peers?  | YES | NO  |
| 2 | Does the student "move through the school" each day (e.g., by changing classes) like his/her non-disabled peers?  | NO  | YES |
| 3 | Does the student's classroom(s) include activities (e.g., team teaching, computer-based instruction, cooperative learning, etc.) like those found in the classrooms of non-disabled students? | NO  | YES |
| 4 | The student eats lunch in the cafeteria during regular lunch times (i.e., not before or after the main lunch crowd).  | NO  | YES |
| 5 | The student goes to recess and/or physical education during the same times as non-disabled students.  | NO  | YES |

Column 1 Total	Column 2 Total
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**VI. Access to Materials, Facilities, and Resources**

1	The student eats lunch in a self-contained or other classroom away from general education students.	YES	NO
2	The student has access to storage facilities (e.g., lockers, cubby spaces) that are in the same general location and are of the same general type as those of non-disabled peers.	NO	YES
3	Does the student attend assemblies, plays, pep rallies, and other large group activities with general education students?	NO	YES
4	Does the student go to the school library for the same kinds of activities (e.g., storytelling, checking out materials, instruction in how to use library resources, etc.) enjoyed by non-disabled students?	NO	YES
5	The student has ready access to learning aids (e.g., reference materials, computers, textbooks, calculators, etc.) that are up to date / of good quality / in good working order.	NO	YES
6	The student has ready access to necessary work materials such as pencils and paper.	NO	YES
		----- Column 1 Total	----- Column 2 Total

**VII. Transportation**

1	If the student is bussed to school ( <i>if not, circle YES and go to the next item</i> ), he/she rides the same bus as general education students.	NO	YES
2	The student's travel time to and from school significantly exceeds that of most of his/her non-disabled, same-age peers.	YES	NO
3	The student must wait an hour or more after school before transportation is available to take him/her home.	YES	NO
4	The student's current transportation system often (more than twice per week) makes him/her late for school in the morning.	YES	NO
		----- Column 1 Total	----- Column 2 Total

**VIII. Related Services**

- |   |   |    |     |
|---|---|----|-----|
| 1 | All related services the student needs are readily available to the student.  | NO | YES |
| 2 | All related services currently received by the student are provided by fully qualified personnel.   | NO | YES |
| 3 | All related services currently received by the student are of sufficient <u>quantity</u> (e.g., administered often enough) to be of maximum benefit to him/her.     | NO | YES |
| 4 | All related services currently received by the student are of sufficient <u>quality</u> (e.g., administered thoroughly enough) to be of maximum benefit to him/her. | NO | YES |

Column 1 Total	Column 2 Total
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**IX. Cumulative Totals**

Transfer the column totals from each section to this worksheet, and then add the numbers in each column to obtain two cumulative scores. You can then compute a percentage for each cumulative score by dividing each score by the total number of items in the checklist, as given below.

Section	Column 1 Total	Column 2 Total
Best Practice Intervention Development		
Setting		
Interactions		
Curriculum		
Organization of the School Day		
Access to Facilities, Materials and Resources		
Transportation		
Related Services		

Cumulative scores

\_\_\_\_\_

Presence of intrusive  
treatments

\_\_\_\_\_

Absence of intrusive  
treatments

Percentages (divide by 43)

\_\_\_\_\_

Presence of intrusive  
treatments

\_\_\_\_\_

Absence of intrusive  
treatments

## X. Score Ranges

Compare the student's "presence of intrusive treatments" score to the following ranges to obtain the appropriate descriptor.

Use the ranges below for a student with mild or moderate disabilities, challenging behavior, health concerns, academic difficulty, and/or social needs.

34% and above	Excessively high
24%-33%	High
14%-23%	Moderately high
4%-13%	Moderate
Below 4%	Low

Use the ranges below for a student with severe or profound disabilities, challenging behavior, health concerns, academic difficulty, and/or social needs.

51% and above	Excessively high
41%-50%	High
31%-40%	Moderately high
21%-30%	Moderate
Below 21%	Low

Evaluation questions:

1. Do these scores seem consistent with the student's current levels of: (a) severity of disability, (b) needed supports (behavioral, medical, vocational, etc.), and (c) challenging behavior?
2. If your answer to question 1 was, "Yes":
  - (a) Have you and your behavior support team devised ways to provide the student with training, behavior support, and guided practice for the development of authentic skills that will help him or her work toward the eventual reduction of treatment invasiveness? If so, is there a system in place for the ongoing evaluation of training and support efficacy? If not, what barriers, if any, must be removed before this can take place?
  - (b) Have you and your behavior support team devised ways to provide involved professionals and other stakeholders with the training and support across relevant environments (e.g., home, school, community) needed to facilitate student skills and behaviors that will reduce the need for more invasive treatments?
  - (c) Though the overall scores indicated low or acceptable levels of treatment invasiveness, are there one or two areas (e.g., within the curriculum) in which improvements should be made?
3. If your answer to question 1 was, "No":
  - (a) How can you organize a team-based, data-based effort to produce a plan for the ongoing evaluation of relevant criteria that would lead to the eventual reduction of treatment invasiveness for this student?
  - (b) How can you and the team organize similar efforts for staff and stakeholder training and support aimed at facilitating positive outcomes that will foster reduction in the invasiveness of treatments for the student?

Partly based on Brown et al. (1977).
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