Cognitive Behavioral Play Therapy in Behavior Consultation Treatment: Making Behavior Changes from the Inside Out in Down Syndrome

Gül KAHVECİ[1]

Abstract

This article presents an individualized Cognitive Behavioral Play T

herapy (CBPT) intervention, to target emotion dysregulation in verbal and physical aggression with Down syndrome (DS) concurrent with mild intellectual disabilities (ID). A female student participated in this pilot individual and clinic-based CBPT intervention. This intervention was implemented within a private clinic (special education and rehabilitation center) for children with developmental and physical disabilities located in Ankara, Turkey. K is a 14-year-old female student diagnosed with DS with a mild ID and co-occurring mood and behavioral disturbances. Participant's emotion regulation difficulties had the potential to quickly escalate to severe behaviors, including physically and verbally aggressive behavior like threating to harm others, kicking and shouting. Single-subject methodology utilizing a multiple-baseline design across behaviors was used to evaluate the intervention. The dynamic process in Cognitive Behavioral Play Therapy (CBPT) has been investigated as a structure that serves to reveal positive behavioral changes, by intervening internally, starting from cognitive processes to outside by observing behavioral changes. The results were interpreted as a decrease in the frequency of destructive behavior of the participant and an increase in communication skills. This study represents an important step toward the development and validation of effective interventions for counselors working with individuals with DS and ID to specifically address adaptive behaviors. Further research needs to be conducted to fully determine the effects of the use of hybrid methods like CBPT for extrovert behavior problems, in different disability groups, within behavioral consultation procedures.

Key Words: Cognitive behavioral play therapy, Down syndrome, Mild intellectual disabilities

Davranışsal Konsültasyon Sağaltımı İçinde Bilişsel Davranışçı Oyun Terapisi: Down Sendromunda İçten Başlayan Dışa Yönelik Davranışsal Değişiklikler Yapma

Özet

Bu makale, hafif zihinsel özürlülüğe eşlik eden Down Sendromuna (DS) sahip bir öğrencinin sözel ve fiziksel saldırganlık ile ortaya çıkan duygu kontrolünü hedefleyerek gerçekleştirilen bireyselleştirilmiş Bilişsel Davranışçı Oyun Terapisi (CBPT) müdahalesini sunmaktadır. Bu müdahale, Ankara'da bulunan gelişimsel ve fiziksel engelli çocuklar için kurulmuş özel bir klinikte (özel eğitim ve rehabilitasyon merkezi) gerçekleştirilmiştir. Araştırmada yer alan müdahaleyi değerlendirmek için tek denekli araştırma modellerinden davranışlar arası çoklu başlama düzeyi modeli kullanılmıştır. Down sendromu tanısına eşlik eden hafif zihinsel yetersizliğe sahip hem duygu durum hem de davranış bozukluğu gösteren 14 yaşındaki bir kız öğrencidir. Katılımcının duygu düzenlemedeki zorlukları, diğerlerine zarar vermek, tekmelemek ve bağırmak gibi fiziksel ve sözlü saldırgan davranışlar da dahil olmak üzere, yüksek seviye problem davranışlardır ve hızla artma potansiyeline sahiptir. Müdahaleyi değerlendirmek için tek denekli araştırma modeli olan davranışlar arası çoklu başlama düzeyi modeline yer verilmiştir. Bilişsel Davranışçı Oyun Terapisi (BDOT) içindeki dinamik süreç, değişimleri içten, bilişsel süreçlere müdahale ile başlatarak dışa doğru yani açıkça görülen olumlu davranış değişikliklerinin ortaya konmasına hizmet

[1] Assist. Prof. Dr., European University of Lefke, Dr. Fazıl Küçük Faculty of Education, Special Education Teaching Department, Lefke, TRNC Mersin 10 Turkey, E-mail: gulkahveci@yahoo.com

eden bir yapı şeklinde araştırmada yer almıştır. Sonuçlar katılımcının yıkıcı davranış sıklığında azalma ve iletişim becerilerinde artış şeklinde yorumlanmıştır. Bu çalışma, DS ve hafif zihinsel yetersizliği olan bireylerle çalışan danışmanlar için, özellikle uyum davranışlara yönelik etkin müdahalelerin geliştirilmesi ve onaylanmasına yönelik önemli bir adım teşkil etmektedir. BDOT gibi hibrid yöntemlerin dışavurum davranış sorunları için, farklı yetersizliğe sahip gruplarda davranışsal konsültasyon süreçleri içerisinde araştırılmasına ihtiyaç vardır.

Anahtar Kelimeler: Bilişsel davranışçı oyun terapisi, Down sendromu, Hafif zihinsel yetersizlik

Introduction

There are increasing evidence which suggests that there are distinctive cognitive and behavioral profiles related to intellectual disabilities (ID) among several genetic syndromes including DS (Rosner, Hodap, Fidler, Sagun & Dykens, 2004). All affected individuals exhibit cognitive impairments like learning difficulties, delayed language development, impaired memory, neurobehavioral abnormalities, and improper executive functions (Lott & Dierssen, 2010; Tau & Peterson, 2010). Executive functions can be explained as the dynamic flow of procedures with a self-regulatory system including inhibitory control, sustained attention-planning and flexibility-memory that organizes and directs cognitive, behavioral and emotional activity (Pennington & Ozonoff 1996).

Lack of executive function (EF) skills can be considered as un-adaptive, these behaviors may not be goal-directed and individuals with DS demonstrate such deficits (Lee et al., 2011). DS neuroanatomical phenotype, shows specific reductions in the size of the frontal lobes (Nadel, 2003), an area of the brain related to EF (Tau & Peterson, 2010). Dysfunction in the executive system, such as difficulties with emotional regulation or inhibitory control, might give rise to maladaptive and problematic behaviors. Working on EF may help children with disabilities, succeed socially by supporting emotion regulation, interpersonal cooperation, and aggression control (Hughes & Ensor, 2011). In a reverse case emotional development and processes of emotion regulation are considered to influence executive cognitive functions, including working memory, inhibitory control, and mental flexibility which are important for the effortful regulation of attention and behavior.

In DS some abnormalities can be observed in molecular level apart from neuroanatomical phenotype malformations. Some of the basic molecular mechanisms may include gene overexpression which interferes with brain development and function. Thus, DS can be associated with many neurological complications, including cognitive deficits, seizures, early-onset dementia that resembles Alzheimer's disease, and neurological complications of many systemic disorders (Dierssen, 2012). Some related anomalies involved an adverse effect on frontal and anterior temporal structures and relative sparing of posterior brain areas, which is generally consistent with DS cognitive topology. Results from a brain functional status

functional connectivity MRI study suggest a distinctive brain functional organization in DS showing a pattern of anomalous connectivity that correlates with poor adaptive behavior, particularly in the communication domain (Pujol et al., 2015). Adaptive behaviors, which are the social, and specially demanding on communication, practical and conceptual skills learnt and are performed by individual so they can function in home, school and society (AAIDD, 2010) has been an area of interest for research about people with intellectual disabilities like DS. Some adaptive behaviors in DS related research subjects include: adaptive behaviors relations to cognitive function (Harrison & Oakland, 2003), self-determination or quality of life (Nota et al. 2007; Sheppard & Unsworth 2011), and the implications for educational (De Bildt, Sytema, Kraijer, Sparrow, & Mindera, 2005), vocational (Su, Lin, Wu, & Chen 2008) and independent living (Felce & Emerson, 2001) success. Studies have documented that behavior problems have been associated with impaired adaptive functioning in individuals with Down syndrome (Borthwick-Duffy, Lane, & Widaman, 1997) and low performance in adaptive functioning makes individuals with DS difficult to live as independent adolescents or adults (Dykens, Hodapp, & Evans, 2006; Hawkins, Eklund, James, & Foose, 2003). Considering the link between adaptive functioning and social skills, compared with typically developed peers to children with Down syndrome, second group had significantly greater problems with attention and social skills (van Gameren-Oosterom et al., 2011). During adolescence and adulthood, individuals in this group are at significant risk for depression (Collacott, Cooper, & McGrother, 1992; Holland, Hon, Huppert, & Stevens, 2000; Holland, Hon, Huppert, Stevens, & Watson, 1998; Nicham et al., 2003; van Gameren-Oosterom et al., 2013; Warren, Holroyd, & Folstein, 1989). Depression in individuals with intellectual disabilities arises from biological predisposition and adverse psychosocial experiences, such as social rejection including bullying, and failure. Limitations in cognition and problem-solving ability along with deficits in adaptive, social, and interpersonal coping skills, the negative impact of these situations may end up with an adverse outcome. Finally, as a big picture Cooper, Smiley, Morrison, Williamson, and Allan (2007), claims that an increased prevalence of depression in individuals with ID could be expected because of the numerous biological, psychological, social, and developmental disadvantages in this population. People with DS may experience mental health difficulties such as depression and it is vital that this condition is treated effectively. Signs and symptoms including withdrawal, poor self-image, distorted and bizarre perceptions, and feelings of uselessness, hallucinations and delusions may be caused by treatable mental illnesses. Motivation-based symptoms may present in the context of depression in DS as well (Janzing, Teunisse, Bouwens, van't Hof, & Zitman, 1999). Motivation symptoms include loss

of interest, psychomotor retardation, fatigue, and impaired concentration and are contrasted to depressive symptoms, symptoms reflecting change of mood before the age of 35, such as sadness, crying spells and aggressive behavior (Sung et al., 1997; Warren, Holroyd, & Folstein, 1989). Interventions may involve counseling for which special skills are required, behavioral management, psychological therapy or the use of medication. Additionally, the indicative of a mental disorder in childhood and adolescence should not be confused with the normal characteristics of developmental stages, which may present similar pathological symptoms.

Depression may interfere with the development of adaptive behavior especially this negative effect may be stronger with respect to the adaptive behavior of younger people (Cooper & Collacott, 1993). Prasher and Hall (1996) reported findings showing that baseline scores of adaptive function in 10 depressed individuals with DS were significantly lower and scores for maladaptive behaviors were higher than in non-depressed, control groups with DS. After one-year follow-up, most individuals who received treatment were still symptomatic but showed evidence of improvement in adaptive functioning and reductions in maladaptive behavior. However, untreated behavior problems have been associated with deficits in education thus leading to decline in school success and quality of life (Foley et al., 2013). Age appropriate social behavior will enable any child and adolescent to have a happier social life, be accepted by friends and be welcomed in leisure activities. Although, several approaches to the management of emotional challenging behaviors in children with special education needs have been identified in the literature like manipulation of environmental stimuli, reinforcement, punishment, functional communication training, and social skill training (Horner, Carr, Strain, Todd, & Reed, 2002; Matson, Dixon, & Matson, 2005) they are mostly based on applied behavioral analytic principles. Such interventions have typically focused on the reduction of observable disruptive behaviors through the use of external controlling stimuli. Dependence on these interventions, however, might mean that individuals with challenging behaviors will continue to require ongoing provision of supports involving external controls, and this could restrict their independence (Whitaker, 2001). People with ID have had little access to psychotherapeutic interventions (Boumparis, Karyotaki, Kleiboer, Hofmann, Cuijpers, 2016) for increasing their adaptive behavior and as a consequence for decreasing depression however, different psychotherapeutic modalities including psychodynamic, cognitive-behavioral and cognitive therapies can be effectively applied in this group (Willner, 2005). According to Willner, the treatment should be matched to the cognitive capacities of the patients. Current behavioral methods have been shown to be successful in controlling problem behaviors, but

they are of limited value to individuals with emotional problems (Willner, 2005). In the case of depression, cognitive behavioral therapy (CBT) has been adapted to the abilities of individuals with milder levels of ID. Lindsay, Howells, and Pitcaithly (1993) concluded about the feasibility of CBT in individuals with depression and mild ID. Other researchers like McCabe, McGillivray, and Newton (2006) showed the effectiveness of a staff-administered CBT program in a larger community-based sample of individuals with mild ID and depressive symptoms. Recently, CBT and Behavior-Analytic Approaches combined to Target Severe Emotion Dysregulation in Verbal Youth with Autism Spectrum Disorder and ID (Parent, Birtwell, Lambright, 2016).If CBT is not appropriate for young children, Knell (1993a, 1993b, 1994) argued that several modifications can be applied to achieve an effective therapy by using puppets and stuffed animals and making a hybrid of CBT and Play Therapy (PT). Puppets, stuffed animals, and play can be used to model cognitive strategies, such as countering maladaptive beliefs and making positive self-statements. The therapist's flexible approach, decrease expectations for verbalizations can contribute significantly to the success of this therapeutic process. Helping the child cope by providing adaptive, positive way of perceiving problem situations via play can be critical in the child's ability to deal with them (Janatian, Nouri, Shafti, Molavi, and Samavatyan, 2008). Through the use of play, cognitive change can be communicated to children by modeling different point of views to a single situation. Examining evidence for distinctive cognitive and behavioral topology associated with the genetic syndrome (DS) is important because evidence of this nature is often used when deciding the most suitable intervention. During CBPT client’s behaviors should be kept goal directed in an effort to satisfy personal needs as experienced in the unique phenomenal field that for that client constitutes reality and the phenomenal field includes everything that is experienced by the child (Landreth, 2002).The dynamic process in CBPT is an internally directed movement going towards outside by apparent behavioral changes for becoming a more positively functioning person; toward positive growth; toward improvement, independence, and more mature as a person.

Making a decision about the most suitable intervention and the implementation can be possible by behavioral consultation procedures which involves at least three individuals: the client, the consultee, and the consultant. The client can be a child who is exhibiting some sort of behavior problem(s) and has special interventional needs. The consultee is typically a caregiver for the client, usually a parent and/or teacher. The consultant can be counseling or special education professional, trained in a variety of treatment practices and techniques. Through the basic

consultation process, the consultant and consultee work together to address the challenging behaviors displayed by the client. The consultation process also can be used to increase the social competencies of the client. Each consultee has specific roles and shared responsibilities in the consultation treatment process. The consultant works with the consultee to elicit a clear description of the behavior problem(s) and goals, examine possible explanations for the behavior and gather direct or indirect data, develop a plan for treatment, and formulate a method for evaluating the effectiveness of the treatment (Ehrlich, & Kratochwill, 2002).The purpose of the present study was to apply CBPT and observe its effectiveness by targeting severe emotion dysregulation in verbal aggression, physical aggression, and development of proactive interpersonal skills via behavioral consultation processes to a 14 year old girl who has DS concurrent with mild ID The purpose of this reseach is to determine the effectiveness of CBPT intervention on three behaviors; appropriate communication initiation, verbal aggression and physical aggression in a student with Down syndrome.

Method

The intervention was tailored to consider the coping skills shortage and meet the participant unique communication, adaptive, and socio-emotional challenges. First step is to gather direct and indirect observational data to elicit a clear description of the behavior problems and goals, including examining the possible explanations for the behavior as an assessment procedure, and then decide about the treatment techniques are detailed. The method used to evaluate this intervention is then presented, followed by the intervention outcomes. Finally, treatment outcomes, and future directions for clinical research are discussed in the conclusion.

Clinical Setting

This intervention was implemented within a private clinic (special education and rehabilitation center) for children with developmental and physical disabilities located in Ankara, Turkey. The clinic provides educational services to children and adults ages 3 to 45, with developmental and physical disabilities using principles/strategies from applied behavior analysis (ABA) as well as cognitive-behavioral strategies like CBPT. The classrooms typically consist of one-to-one (1:1) staff-student ratios. The school's educational team is composed of master-level clinical psychologist, an Asst. Prof. special education administrator, certified special education teachers and a physiotherapist. The clinic was accredited and licensed by the "Republic of Turkey Ministry of Education" in 1999.

Participant

A female student participated in this pilot individual and clinic-based CBPT intervention. K is a 14-year-old female student diagnosed with DS with a mild ID and co-occurring mood and behavioral disturbances. She is fully conversational, although much of her conversation involves perseveration on preferred topics. Her IQ score is 65 (mild cognitive disability) (Wechsler Intelligence Scale for Children). K is in the 8th grade of an elementary school and receives support from the private clinic where K has been attending for five years. K has a score of 14 in the Boratav Depression Screening Scale (Bordepta) (maximum score 17) (showing that K is severely depressed) which is valid and reliable, including optimal sensitivity and specifity for recognizing depression. Bordepta was preferred because K answers yes or no type questions more easily. The concurrent validity of the scale as correlated with The Beck Depression Inventory and Trait Anxiety Scale were 0.812 and 0.763 respectively (Boratav, 2003). K refuses to go to school in the last month because she is severely depressed.

K has vision problems and wears glasses while reading and writing. K looks at the book from a distance of 30 cm. K can read the text given to her and answer comprehensive questions. K can retell the text, which contains 200 words, and describes the meaning of the proverbs and simple idioms. K counts forward from 1 to 500, and reads and writes numbers. K does manual sorting with two-digit numbers and solves the problems that need to be summed up. When performing subtraction operations, K performs the operation by counting forward, and solves simple problems that require subtraction operation independently. K takes drama and music lessons as a leisure time activity from the clinic. Behavior consultation interviews with family members and classroom teachers were noted that K can perform verbal and physical violence in school and at home, K had a great deal of reaction to small problems, difficulty in noticing how her behavior might affect other peers, difficulty in completing tasks in classroom academic work where there was anger outbursts in the school. In addition, there is a feeling that K can easily get upset, can get upset when the plan or routine changes, can explode due to minor reasons, behave in a more brutal or pure manner in the group, change the emotional state quickly, make caution in things she can do, and it was determined that K could drown in tears. In addition, K is aware of the fact that she is unable to complete successfully the academic activity that she has requested, because she is caught in a small detention and misses the main idea, controls more than her playmates, speaks or plays with a loud voice, K is determined that the time of attention is short. K had no previous history of participating in individual CBT, PT or CBPT.

Experimental Design

Single-subject methodology utilizing a multiple-baseline design across behaviors was used to evaluate this intervention (Carr, 2005; Christ, 2007; Kazdin, 1982; Kırcaali-İftar & Tekin, 1997). Clinical progress was monitored through repeated measurements on behavior targets. Criteria to introduce intervention phase was based on the student's mastery of identified prerequisite skills. Given these clinical considerations, multiple-baseline (across-behaviors) design was selected due to its experimental flexibility and established ability to control for maturation, test-retest, and instrumentation as an internal validity threats (Carr, 2005; Christ, 2007; Harvey, May, & Kennedy, 2004). In this single-subject methodology several behaviors of a given individual are identified and measured over time to provide baselines against which changes can be evaluated. Within a multiple baseline across behaviors design, three or more behaviors are selected and the independent variable, or target intervention, is successively applied to each behavior. Experimental control is established when an individual's performance improves for behaviors that are being treated, but remains stable for those behaviors that have not yet been treated. In this study, physical aggression, verbal aggression, and appropriate communication initiation skills served as the behaviors.

Data Collection

Aggressive Behavior

Incidents of aggressive behavior included both physical and verbal aggression. Physical aggression was defined by the researcher as any observable use of physical force against another individual or objects Verbal aggression defined by the researcher as consisted of the use of verbal threats to harm others that were general or specific in their content The frequency of physical, verbal aggression and appropriate communication initiation skills execution incidents were collected on a daily basis by the student's parents and teachers. Incidents of physical and verbal aggression and proactive interpersonal skills execution were recorded throughout the day whenever they occurred using a data sheet attached on a clipboard carried by the parents and teachers.

Therapist Fidelity

The procedural and sequential consultation stages were used for having a satisfactory treatment integrity level. Thus, internal validity is ensured when changes in the dependent variable (treatment outcome) can be attributed to the independent variable (the intervention), which is the case when treatment is implemented as intended. Triple assessment system was used in

order to keep internal validity high. Triple assessment system includes (a) adherence assessment, (b) competence assessment, and (c) treatment integrity. It has been proven that in order to achieve sufficient generalizability for ratings of adherence and competence 5–10 treatment sessions per client are needed (Dennhag, Gibbons, Barber, Gallop, & Crits-Christoph, 2012). The following were used in this triple assessment process respectively (a) Cognitive-Behavioral Therapy Adherence Scale (CBT-AS) was used with a 3-point rating scale (0 = not adherent, 1= partly adherent, and 2 = adherent) to assess the level of therapist adherence to the CBPT treatment (Weck, Hilling, et al., 2011). (b) Therapist competence was evaluated with the Cognitive Therapy Scale (CTS) (Blackburn, 2001) after revision (c) The assessment of treatment integrity. It has a great value and involving the evaluation of both therapist adherence and therapist competence, an independent evaluation of therapists' competence in applying the treatment protocol to the client, and the presentation of consultation as planned before is a great need. For the evaluation of CBT-AS, CTS and treatment integrity, direct assessment method, from videotape was used and evaluations were performed by two experienced therapists as an independent judge. Raters made their ratings independently and were not informed about the stage of therapy at which the recording was made.

Because lack of treatment integrity related valid measures (see Perepletchikova, 2011 for more details) interventions that may be at high risk for treatment inaccuracies (e.g., interventions redesigned for individuals with special needs) more rigorous procedures may be in need for ensuring treatment integrity. For this reason "Manual of the Revised Cognitive Therapy Scale" was rearranged for CBPT considering cognitive level of the participant (Blackburn, 2001). Assessment of adherence and competence data were collected by using the 7-point scale where each point of the Likert scale is defined to increase reliability and discriminatory power. In 0 Competence level; therapist fails to use CBPT methods, and in 6 competence level; therapist performs an excellent or successful applications even in the face of participant difficulties. This manual contains such headings; agenda setting, feedback, collaboration, pacing and efficient use of time, interpersonal effectiveness, facilitation of emotional expression, eliciting behaviors, guided discovery, conceptual integration, application of cognitive change methods, application of behavioral techniques, use of homework, non-verbal behavior. Non-verbal behaviors contains item such as; appropriate eye-contact, expressive facial communication, expressive body movements, appropriate posture, uses humor appropriately, appropriate tone of voice, appropriate volume of voice, positioning of self and participant, appropriate silences, clarity of

speech, facilitatory grunts and noises, professional demeanor (dress), and professional demeanor (language).

Social Validity Assessment

In addition to measuring rates of maladaptive and adaptive behavior, a social validity assessment was completed. Behavior consultation interviews and school (canteen, class) observations were completed by two teachers throughout this intervention. Interviews were completed with K's families and teachers. The social validity assessment included variables such as the student's coping and adaptive skills (e.g., is the student providing solutions to prevent conflicts and solve problems?), and their ability to participate in school-wide activities, and family activities per caregivers' report and direct observation during school visits.

Procedure

Individual therapy sessions were 45 minutes long and were scheduled at an optimal time to promote participant's participation. A treatment integrity checklist was completed by the consultant during the session to ensure treatment adherence. Moreover, related evaluations were performed by two experienced therapists as an independent judge by using videotape recordings. The session's structure included: (1) CBPT plays which was individually selected; and (2) skills-building activities (e.g., modelling, role-play). The sessions were always ended on a positive note (e.g., positive feedback on the student's participation, discussion of an upcoming event or subject the student is particularly enthusiastic about). It was immediately followed by a short break which included a post-session reinforcement activity of the student's choice (e.g., painting a picture, playing with Orff instruments, singing a song with the consultant together). In addition to therapy sessions performed twice a week, the participant's consultant participated in weekly classroom consultations for 50–60 minutes for treatment planning, progress reporting, data collection and problem-solving purposes as a part of behavior consultation procedures.

CBPT Schedule and Behavior Consultation Stages

Behavior consultation stages; were prepared to perform in three stages; needs identification/analysis ("Building on Strengths"), CBPT implementation, and evaluation. First stage includes, jointly identifying and defining child's needs and priorities in behavioral terms. Determining a primary behavior to address which is called "target behavior" for initial intervention. Develop appropriate goals for target behavior across home school, and clinic.

Discussing what is happening before and after the priority behavior, including specific patterns that occur, during the focused time/setting and jointly establish a procedure to collect baseline data across settings. Second stage includes, developing a plan built upon strengths and competencies to address the priority behavior across different settings like home, school, and clinic. Then, training parents and teachers for data collection. Implementing agreed-upon intervention across home, school, and clinic. Making immediate modifications to plan if necessary is needed. Assessing immediate changes in student's behavior if happens. Final stage includes, determining if the goals for the priority behavior have been met. Discuss termination of intervention plan if all the goals are met.

Therapy Schedule

The present intervention included three phases: (1) baseline phase, (2) skills acquisition (CBPT) in the form of post and delayed post interaction, and (3) generalization skills.

Baseline Phase

Following referral into the program, an interview was conducted with the participant's teachers and parents to determine their opinions about treatment appropriateness and subsequently guide treatment planning. Prerequisite skills assessed included emotion identification, basic social skills, communication abilities, and disruptive behaviors exhibited in the school setting included in observations. Emotion recognition was of primary concern, considering the high comorbidity of these deficits in individuals with DS and ID. Participant's baseline ability to correctly identify emotions and understand social situations (e.g., interpreting other's affect, using empathy and perspective-taking skills) were closely examined. Emotions assessed included happiness, anger, sadness, and anxiety. Participant did not demonstrate considerable deficits in these domains. School related data collection was initiated to establish a baseline of the frequency of the individual's most challenging behaviors, as well as to clarify any antecedents and consequences potentially contributing to their occurrence. Data collection helped identify the behavioral function of maladaptive behavior as "escape" from unpleasant situation.

Skills Acquisition (CBPT)

Adaptations (i.e., structure or content), modifications (i.e., treatment components) of standardized interventions are often necessary when working with special populations (Eyberg, 2005; Reaven, 2009). For this reason baseline results were used to develop an individualized, clinically and developmentally appropriate therapy curriculum that met participant's unique

learning, communication, and behavioral challenges. Introductory therapy sessions were used to build therapeutic rapport, familiarize the individual with the therapy process, and identify the students' interests, preferences, and daily schedule/routines important to incorporate in therapy. Participants' personal interests, strengths, and weaknesses were utilized to facilitate sustained attention and socially relevant processing, as well as to develop treatment plans and materials.

Session Activities

Participant learned to use a rating scale to identify her feelings and to develop their own rating scale over time. She progressively learned to identify mildly, moderately, and highly upsetting situations and behaviors related to each situation. She learned to recognize her own precursors of anger and anxiety to proactively and efficiently using coping strategies. Skills-acquisition sessions also targeted the development of personal tools that would prevent challenging or crisis situations in the future. These included the teaching and practice of skills such as thought correction (e.g., "They hate me," "I'm a bad and ugly girl," "I'm stupid"), and cognitive flexibility skills (e.g., "What else could we do?" "What's another reason why they behave like this?"). Behaviors incompatible with the maladaptive behavior were practiced, such as communicating, talking with a moderate-level voice instead of yelling or ignoring. Homework is a key part in most cognitive-behavioral therapies (Hofmann, 2011). Repeated practice with immediate performance feedback is also a core component of many behavior-analytic interventions. As such, the participant was asked to practice skills reviewed in therapy session throughout the school week.

***CBPT Procedures*: Session 1-2**

K is aware that she has Down syndrome and she explains this difference with an original statement that "one of my chromosomes is different from you". During the first session, she was expected to think and then share her thoughts herself about the situations she was uncomfortable with and gave her unhappiness to consultant. Then K started to explain the problems she had lived in school. Related problems include the presence of unwanted physical contact of her friends, glances, verbal expressions, and the fact that during play her friends leave K out of their play. A school happiness chart was prepared for K to identify uncomfortable situations. It was attempted to determine at which time intervals K was unhappy and to what extent it affected the general school affection. K gives a score of happiness to herself in the morning, lunch break and evening. Having 100 as a score means that she is very happy.

Tablo 1. School Happiness Chart

	Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
Morning	100	100	100	100	100
Lunch break	60	50	50	70	50
Evening	80	80	70	80	60

K was used to willing to go to school because she likes school very much in the mornings but in the last month there are some adverse situations starting to happen towards lunch time. It is important to note that during interviews, K is excluded while waiting in the canteen queue and playing with her friends during the lunch break. K was disturbed by her friend's abusive conversations. K is afraid of failing in exams and for response to this failure K starts hitting and shouting simply showing verbal and physical violence.

During this session, K is asked to list some of the characteristics of her which may be different for each person.

- The name she has is very beautiful
- Very smart
- Does not like bad kids' jokes
- Likes listening quietly
- Attend classes

As another example, she was asked to count the characteristics of a student friend. The characteristics of the friend D are as follows from K's point of view;

- Always curses
- Does not care about crying
- D eats the same dishes with K

Consultant first asks K herself to count the good than bad features of K. Consultant can ask such questions because K has a mild disability and she can talk about her judgments about herself and her behaviors.

The consultant asks whether D has good features and K starts to rank the good properties of D;

- She (D) says that K is very sweet

- (D) Uneasy at the exam
- D is excited
- D hugs K
- D kisses K

Consultant asks K to count the bad features of K

- K cries a lot
- K fights with her friends
- K suffers a nervous breakdown

K is aware of the negative properties found in her.

Session 3

"What are our hands for?" The consultant worked on this issue. Consultant asked for which purposes we are using our hands. It is told that our hands have other nice functions and it's no good using our hands to hit a friend. C: If we cannot remember what we should do with our hands when we were getting angry, then I can go to one side of a long fabric-covered wide pipe and try to hit you with my hands, you can do the same from the other side of the pipe. Let's try to hit or touch each other with our hands. Consultant and participant tried to touch each other from one end of the tunnel to the other with laughter but they couldn't hit each other because of the distance between them. After the play consultant explained that if we can get a physical distance with our friends when we get angry, it will become impossible for us to hit them.

Session 4

Then the canteen situation was prepared. In fact, the reason for the impulse in the lunch time is due to the fact that a high number of students try to buy food from a small area. But K is internalizing this struggle and thinks that it is made on purpose. In the drama-like play study, the canteen sequence in which K was also played was replayed and pleasant moments (like sardines in the can where everyone is on top of each other) were experienced during these impulses. After this play session K was laughing and having fun in the canteen when she went to school the next day.

Session 5

Consultant asked K about the tests that she failed, but no lesson was found that she failed. During the test, she said that her hands were sweating and her heart beats fast. The consultant

gets a test paper in front of her with the help of a stopwatch and the consultant starts to mimic her. Consultant begins to show the same reactions that the participant has been demonstrating when taking exams. The task of K is to heal the consultant within 3 minutes. In her consultant role K demonstrates how to breathe in anxiety moments. K told to consultant that she had learned breathing exercises from her mother (her mother is a nurse). K takes breathing exercises to calm down and begins to tell what to do to avoid worry. Then the role changes and this cycle are repeated several times. After the exam activity is over, the consultant picks up a balloon and tells K that each breath is a problem and that he blows all his problems into the balloon. K starts to blow the balloon. C: K, we can explode like a balloon if we enlarge the problems inside us. Then when we face problems, we have to solve them instead of throwing them into ourselves. Consultant and K blow their problems to the balloons and they roll down from one side of the therapy class to the other with 2 balloons and watch together how balloons are getting smaller and their salvation from their problems with laughter.

Session 6

Firstly the consultant shows a notebook to K. The outer face of the notebook is covered with leather and there are pages on the inside face. When the page part is looking towards K, the consultant asks K what she sees. K answers as "page". The consultant reverses the face of the book and asks K again.

C: What do you see now?

K: Black cap

C: What is this?

K: Notebook

C: Yes, the notebook, but it has 2 faces, one looks paper, it's white and the other side is black. The white part is the good side of our friends; the black side is the bad face of our friends. If we cut off the black side (which is a metaphor for using black cover as bad behavior and white pages as good behavior), we will lose the notebook. We will try to see the white pages of people.

K: Smiles

C: When our friends are swearing we will remember this notebook. When our friend swears, it is the black side, and we will try to look immediately for our friend's white pages. Their good properties.

K: I got it (with a big smile on her face)

The consultant explained how we can change our perspective on events rather than the fact. It is difficult for us to prevent our friends from swearing (we are forced to use physical violence when we try to prevent them). K learns this concept because K has got enough cognitive level.

Sessions 7-9

Proactive interpersonal skills were rehearsed, including getting other people's attention appropriately (e.g., saying with a moderate-level voice, "Excuse me?" or "Do you have a minute?" instead of yelling or pushing others for stating an appropriate communication), initiating and maintaining social conversations about a variety of topics (i.e., asking a designated adult for help, telling others when something makes her feel upset). Individual coping-skills selection was discussed collaboratively with the participant (with input from her parents and teachers) to maximize motivation and practical usability. Proactive interpersonal skills as part of coping skill strategies were frequently modeled by the therapist, role-played, and practiced to increase fluent and competent execution in the therapy setting. Coping-strategy use was initially prompted by the therapist and progressively faded for independence.

Ending Sessions and Skills Generalizations

As the participant made progress in her ability to independently use coping strategies and solve everyday problems, individual therapy sessions were progressively faded out and replaced by continued consultation where identification of new precursors and adaptive strategies can be added for skill-maintenance purposes. The therapist remained available for consultation if the student expressed the need to talk. Following skills acquisition around canteen area, the focus of therapy shifted to using the skills in different settings other than school environment (home) for skill generalizations.

Findings

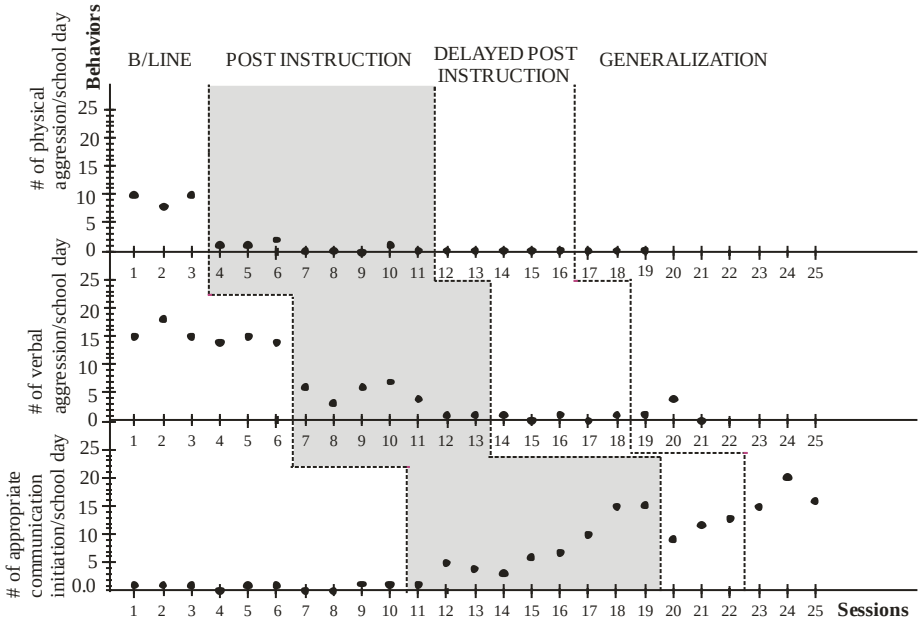

Figure1. Frequency of Appropriate Communication Initiation, Verbal Aggression, Physical Aggression per School Day Data Including Generalization Phase Where the Data Collected from Home.

The purpose of the present study was to determine the effectiveness of CBPT intervention on teaching the social skills including decreasing verbal and physical aggression, and development of appropriate communication initiation skills embedded in behavioral consultation processes. Delayed post treatment (maintenance) and generalization effects of the intervention were also analyzed in the study. Lastly, the study was designed to reveal the consulters' opinions about the intervention. Based on the results of this study several findings are worthy of discussion. Additionally, the treatment integrity data showed high degree results.

Skills Acquisition

During skills acquisition, the list of triggers and precursors continued to be updated based on student feedback, classroom observations, and consultations with the consulters. Coping strategies were modeled and practiced in therapy sessions. Using the CBPT model, maladaptive thoughts were identified for participant and addressed through cognitive restructuring exercises thus, starting from inside. School consultations were provided on a weekly basis to review participant's progress. Similarly, student's progress was reviewed with her family and school teachers on a regular basis. Frequency of appropriate communication initiation, verbal aggression, physical aggression data proves that participant's physical aggression was ended in school and at home. K's rates of physical aggression decreased relatively quickly when the

skills-generalization procedures were introduced. At the fifth week of intervention, rates of physical aggression were consistently down to zero. Her verbal aggression was almost ended in school and at home. One data point from generalization phase showed an incidence of verbal aggression but later participant was managed to put forward her coping skills with her sister. Appropriate communication initiation frequency was almost absent in baseline but starting after the 14th session it showed a consistent increase. In delayed post instruction phase frequency level was dropped in the beginning but result showed an increase over time including generalization phase.

About two months have passed since the end of the therapy. There is no significant problem with the K's adaptation to the school. The school happiness chart scores show 90-100% happiness in school in a full school day. Moreover, K's behaviors are in harmony with their friends and her classmates have increased dramatically. Results from the treatment integrity and social validity are also reported under this section. In order to achieve sufficient generalizability for ratings of adherence and competence 10 treatment sessions were used. Cognitive-Behavioral Therapy Adherence Scale (CBT-AS) level was found as 2 which resembles therapist's high adherence. Therapist competence was evaluated with the Cognitive Therapy Scale (Blackburn, 2001) after revision and found that therapist was in 6th level which was showing the most competent level. This assessment performed by two experienced therapists and they were 100% competent in their judgments. Positive outcomes were observable across raters. Participant's parents reported a reduced number of conflicts (arguing, verbal and physical aggression) during weekend visits, and they noted that conflict resolution was noticeably easier when conflicts occurred. Participant's teachers reported the successful introduction of new community activities (e.g., ability to participate in social events, such as going to a movie theater, restaurant, or bowling alley). These positive outcomes were corroborated with clinical observations completed by the author in the school environment. Participant's parents and teachers were all reported positive outcomes following treatment and approved of the feasibility of the intervention during the generalization phase. Thus, social validity data showed that family members and teachers enjoyed participating in such a study and according to the rearranged "Manual of the Revised Cognitive Therapy Scale" therapist has got 6 as a competency level score.

Discussion and Conclusion

Limitations in cognition and problem-solving ability with deficits in adaptive, social and interpersonal coping skills have negative impact on education thus leading to behavior problems

and reduction in school success and quality of life in children with DS. CBPT has been investigated as a structure that serves to reveal positive behavioral changes, by intervening internally, starting from cognitive processes to outside/to observable behavioral changes. The results were interpreted as a decrease in the frequency of destructive behavior of the participant and an increase in communication skills. The use of the CBPT model and exercises helped participant to identify maladaptive feelings, behaviors, and thoughts, as well as to understand the interconnection among these elements and gain clinical insight into her own triggers and precursors. Behavior analytic techniques, such as prompting and modeling, helped participant acquire and fluently master new functionally equivalent adaptive skills. Of these cognitive-behavioral and play therapy strategies, programming for skills generalization, through the development and implementation of a coping skills protocol, was particularly helpful in promoting the participants' independent and effective use of coping skills across a variety of "real life" situations and settings. In CBPT, modeling which is a core point provides an ideal situation for breaking the link between an adverse stimulus and its maladaptive response by demonstrating adaptive and coping methods. As therapy progresses, the model presents more adaptive behaviors and thought processes, and results a higher level of understanding that enables the child to begin to incorporate them into her own behavioral repertoire. For this reason directive play therapies embedded in CBPT may be required for modeling and appropriate for specific issues like varying emotional conditions. CBPT is directive, yet it allows the child to develop a sense of control and trust within the structure provided by the therapist.

When consultations were completed with the participant's caregivers (i.e., parents and teachers) in the skill generalization step, parents continue identifying potentially challenging situations for the participant and address them proactively. As a result, an increasing number of individualized and socially valid coping strategies and clinical tools were added to the participant's behavior repertoire. Treatment integrity procedures were also used to limit potential threats to data collection and intervention delivery. The comparison of results across behaviors and phases can demonstrate variables' codependence and control for internal threats. By continuing to research CBPT as a therapeutic agent, much may be learned about the processes for coping and adaptation. Research that provides continuity across settings like home, school and clinic environment can also be considered as greatly needed. More studies are needed to further investigate the effectiveness of adapted therapeutic interventions of DS children with mild disabilities. Similarly, exploring ways to extend this work to the children with other mild disabilities is important for feasibility and acceptability, which may necessitate

the formal manualization of this protocol. Consultants working in the field of developmental disabilities can find themselves isolated when facing the unique challenge of tailoring available manualized intervention and integrating therapeutic models (e.g., CBT, PECS, positive behavior supports) to meet their clients' needs. As such, the adaptation and modification of psychotherapy to special populations represents a relatively new and exciting area of study. Facilitating executive function via cognitive behavioral play therapy may help children succeed socially by supporting emotion regulation, interpersonal cooperation, and aggression control.

Recommendations

This study represents an important step toward the development and validation of effective interventions for counselors working with individuals with DS and ID to specifically address adaptive behaviors. Investigating the use of hybrid methods like CBPT for specific problems, in different disability groups, within behavioral consultation procedures also is in need. Research also is needed to examine whether the level of acceptability of a treatment creates a window of opportunity for a treatment to be effective. Further, research concerning the most successful applications of behavior consultation and also when it may be contraindicated for some cases, such as where there is a significant degree of teacher resistance, family dysfunction, or home-school conflict, will be valuable information for special education teachers and school psychologists.

References

American Association on Intellectual and Developmental Disabilities (AAIDD). (2010). Intellectual Disability: Definition, Classification, and Systems of Support. American Association on Intellectual and Developmental Disabilities, Washington, DC.Blackburn, I.M., James, I. A., Milne, D. L., Baker, C., Standart, S., Garland, A.,

Reichelt, F. K. (2001). The Revised Cognitive Therapy Scale (CTS-R): *Psychometric Properties. Behavioural and Cognitive Psychotherapy, 29*, 431–446.

Boratav, C. (2003). Boratav Depresyon Tarama Ölçeği (Bordepta): Epidemiyolojik çalışmalar ve birinci basamak sağlık hizmetinde depresyonu tanımaya duyarlı bir ölçek. *Psikiyatri Dergisi*; *14*(3), 172-183.

Borthwick-Duffy, S. A., Lane, K. L., & Widaman, K. F. (1997). Measuring problem behaviors in children with mental retardation: Dimensions and predictors. *Research in Developmental Disabilities, 18,* 415–433.

Boumparis, N., Karyotaki, E., Kleiboer, A. Hofmann, S.G., & Cuijpers, P. (2016). The effect of psychotherapeutic interventions on positive and negative affect in depression: A systematic review and meta-analysis. *Journal of Affective Disorders, 202,* 153-162.

Carr, J. E. (2005). Recommendations for reporting multiple-baseline designs across participants. *Behavioral Interventions, 20,* 219–224.

Christ, T. J. (2007). Experimental control and threats to internal validity of concurrent and nonconcurrent multiple baseline designs. *Psychology in the Schools, 44*(5), 451–459.

Collacott, R. A., Cooper, S. A., & McGrother, C. (1992). Differential rates of psychiatric disorders in adults with Down's syndrome compared with other mentally handicapped adults. *The British Journal of Psychiatry: The Journal of Mental Science, 161,* 671–674.

Cooper, S. A., & Collacott, R. A. (1993). Prognosis of depression in Down's syndrome. *Journal of Nervous and Mental Disease, 181,* 204–205.

Cooper, S. A., Smiley, E., Morrison, J., Williamson, A., & Allan, L. (2007). An epidemiological investigation of affective disorders with a population-based cohort of 1023 adults with intellectual disabilities. *Psychological Medicine, 37,* 873–882.

De Bildt, A., Sytema, S., Kraijer, D., Sparrow, S., & Minderaa, R. (2005). Adaptive functioning and behaviour problems in relation to level of education in children and adolescents with intellectual disability. *Journal of Intellectual Disability Research, 49,* 672–681.

Dennhag, I., Gibbons, M. B. C., Barber, J. P., Gallop, R., & Crits-Christoph, P. (2012). How many treatment sessions and patients are needed to create a stable score of adherence and competence in treatment of cocaine dependence? *Psychotherapy Research, 22,* 475–488.

Dierssen, M. (2012). Down syndrome: the brain in trisomic mode. *Nature Reviews Neuroscience, 13,* 844-858.

Dykens, E. M., Hodapp, R. M., & Evans, D. W. (2006). Profiles and development of adaptive behavior in children with Down syndrome. Down Syndrome, *Research and Practice, 9*(3), 45–50.

Ehrlich, M. E., & Kratochwill, T. R. (2002). Behavioral Consultation Therapy. *Encyclopedia of Psychotherapy*, *1*, 191–205.

Eyberg, S. M. (2005). Tailoring and adapting parent–child interaction therapy to new populations. *Education and Treatment of Children, 28*(2), 197–201.

Felce, D., & Emerson, E. (2001). Living with support in a home in the community: Predictors of behavioral development and household and community activity. *Mental Retardation and Developmental Disabilities Research Reviews, 7,* 75–83.

Foley, K. R., Jacoby, P., Girdler, S., Bourke, J., Pikora, T., Lennox, N., and Leonard, H. (2013). Functioning and post-school transition outcomes for young people with Down syndrome. Child: Care, *Health and Development*, *39*, 789–800.

Harrison, P. L., & Oakland, T. (2003). *Adaptive Behavior Assessment System*-Second Edition. San Antonio, TX: Harcourt.

Harvey, M. T., May, M. E., & Kennedy, C. H. (2004). Nonconcurrent multiple baseline designs and the evaluation of educational systems. *Journal of Behavioral Education*, *13* (4), 267–276.

Hawkins, B. A., Eklund, S. J., James, D. R., & Foose, A. K. (2003). Adaptive behavior and cognitive function of adults with Down syndrome: Modeling change with age. *Mental Retardation, 41*(1), 7–28.

Hofmann, S. (2011). *Introduction to modern CBT: Psychological solutions to mental health problems.* Oxford, UK: Wiley-Blackwell.

Holland, A. J., Hon, J., Huppert, F. A., & Stevens, F. (2000). Incidence and course of dementia in people with Down's syndrome: Findings from a population-based study. *Journal of Intellectual Disability Research*, *44*, 138–146.

Holland, A.J., Hon, J., Huppert, F.A., Stevens, F., & Watson, P. (1998) A population-based study of the prevalence and presentation of dementia in adults with Down's syndrome. *British Journal of Psychiatry, 172*, 493-498.

Horner, R. H., Carr, E. G., Strain, P. S., Todd, A. W., & Reed, H. K. (2002). Problem behavior interventions for young children with autism: A research synthesis. *Journal of Autism and Developmental Disorders*, *32*, 423–446.

Hughes, C., & Ensor, R. (2011). Individual differences in growth in executive function across the transition to school predict externalizing and internalizing behaviors and self-perceived success at 6 years of age. *Journal of Experimental Child Psychology, 108*, 663–676.

Janatian, S., Nouri, A., Shafti, A., Molavi, H., & Samavatyan, H. (2008) Effectiveness of play therapy on the bases of cognition behavioral approach of symptoms of attention deficit/hyperactivity disorder (ADHD) among primary school male students aged 9–11. J Res *Behav Sci, 2*,110–112

Kırcaali-İftar, G., & Tekin, E. (1997). *Tek denekli araştırma yöntemleri*. Türk Psikologlar Derneği Yayınları.

Landreth, G. (2002). *Play therapy: The art of the relationship* (2nd ed.). Philadelphia, PA: Brunner-Routledge.

Lee, N. R., Fidler, D. J., Blakeley-Smith, A., Daunhauer, L., Robinson, C., & Hepburn, S. (2011). Caregiver-report of executive functioning in a population-based sample of young children with Down syndrome. *American Journal on Intellectual and Developmental Disabilities, 116*(4), 290–304.

Lott IT, Dierssen M. (2010). Cognitive deficits and associated neurological complications in individuals with Down syndrome. *Lancet Neurol*; *9*, 623-33.

Lindsay, W.R., Howells, L., & Pitcaithly, D. (1993). Cognitive therapy for depression with individuals with intellectual disabilities. *British Journal of Medical Psychology*, *66*, 135-141.

Loveland K. A, & Kelley M. L. (1988). Development of adaptive behavior in adolescents and young adults with autism and Down syndrome. *Am J Ment Retard*, *93*(1), 84–92.

Matson, J. L., Dixon, D. R., & Matson, M. L. (2005). Assessing and treating aggression in children and adolescents with developmental disabilities: A 20 year overview. *Educational Psychology, 25*, 151–181.

McCabe, M.P., McGillivray, J.A., & Newton D.C. (2006). Effectiveness of treatment programs for depression among adults with mild/moderate intellectual disability. *Journal of Intellectual Disability Research, 50*, 239-247.

Nadel, L. (2003). Down's syndrome: A genetic disorder in biobehavioral perspective. *Genes Brain and Behavior, 2*, 156–166.

Nicham, R., Weitzdorfer, R., Hauser, E., Schubert, M., Wurst, E., Lubec, G., & Seidi, R. (2003). Spectrum of cognitive, behavioural and emotional problems in children and young adults with Down syndrome. *Journal of Neural Transmission, 67* (Suppl.), 173–191.

Nota, L., Ferrrari, L., Soresi, S., & Wehmeyer, M.L. (2007). Self-determination, social abilities, and the quality of life of people with intellectual disabilities. *Journal of Intellectual Disability Research, 51*, 850-865.

Pennington B. F., & Ozonoff S. (1996) Executive functions and developmental psychopathology. *Journal of Child Psychology and Psychiatry, 37,* 51–87.

Parent, V., Birtwell, K. B., & Lambright, N. (2016). Combining CBT and Behavior-Analytic Approaches to Target Severe Emotion Dysregulation in Verbal Youth With ASD and ID *Journal of Mental Health Research in Intellectual Disabilities, 9,* (1-2), 60-82.

Perepletchikova, F. (2011). On the topic of treatment integrity. *Clinical Psychology: Science and Practice, 18,* 148–153.

Prasher, V. P., & Hall, W. (1996). Short-term prognosis of depression in adults with Down's syndrome: Association with thyroid status and effects on adaptive behaviour. *Journal of Intellectual Disability Research, 40,* 32–38.

Pujol, J., Hoyo, L., Blanco-Hinojo, L., Sola, S., Macia, D., Martinez-Vilavella, G., Amor, M., Deus, J. Rodriguez, J., Farre, M., Dierssen, M., & Torre, R. (2015) Anomalous brain functional connectivity contributing to poor adaptive behavior in Down syndrome. *Cortex, 64*, 148-156.

Reaven, J. A. (2009). Children with high-functioning autism spectrum disorders and co-occurring anxiety symptoms: Implications for assessment and treatment. *Journal for Specialists in Pediatric Nursing, 14*(3), 192–199.

Rosner B. A., Hodapp R. M., Fidler D. J., Sagun J. N., & Dykens E. M. (2004) Social competence in persons with Prader-Willi, Williams and Down syndromes. *Journal of Applied Research in Intellectual Disabilities, 17,* 209–17.

Sheppard, L., & Unsworth, C. (2011). Developing skills in everyday activities and self-determination in adolescents with intellectual and developmental disabilities. *Remedial and Special Education, 32,* 393– 405.

Su, C.Y., Lin, Y.H., Wu, Y.Y., & Chen, C.C. (2008). The role of cognition and adaptive behavior in employment of people with mental retardation. *Research in Developmental Disabilities, 29*, 83–95.

Sung, H., Hawkins, B.A., Eklund, S.J., Kim, K.A., Foose, A., May, M.E., *et al.* (1997). Depression and dementia in aging adults with Down syndrome: *A case study approach Mental Retardation, 35*, 27-38.

Tau, G. Z., & Peterson, B. S. (2010). Normal development of brain circuits. *Neuropsychopharmacology, 35*(1), 147–168.

Van Gameren-Oosterom, H. B., Fekkes, M., Buitendijk, S. E., Mohangoo, A. D., Bruil, J., & Van Wouwe, J. P. (2011). Development, problem behaviour, and quality of life in a population based sample of eight-year-old children with Down syndrome. *PLos One*, 6. doi:10.1371/journal.pone.0021879

Van Gameren-Oosterom, H. B., Fekkes, M., van Wouwe, J. P., Detmar, S. B., Oudesluys-Murphy, A. M., & Verkerk, P. H. (2013). Problem behavior of individuals with Down syndrome in a nationwide cohort assessed in late adolescence. *Journal of Pediatrics, 163*(5), 1396–1401.

Warren, A. C., Holroyd, S., & Folstein, M. F. (1989). Major depression in Down's syndrome. *British Journal of Psychiatry, 155*, 202–205.

Weck, F., Hilling, C., Schermelleh-Engel, K., Rudari, V., & Stangier, U. (2011). Reliability of Adherence and Competence Assessment in Cognitive Behavioral Therapy: Influence of Clinical Experience. *The Journal of Nervous and Mental Disease, 199* (4), 276-279.

Whitaker, S. (2001). Anger control for people with learning disabilities: A critical review. *Behavioural and Cognitive Psychotherapy, 29*, 277–293.

Willner, P. 2005. The effectiveness of psychotherapeutic interventions for people with learning disabilities: A critical overview. *Journal of Intellectual Disability Research, 49*, 73-85.