

Case Study for M

Jennifer L. Miles

Graduate Programs

Nominated by Jean Prast, Professor of Occupational Therapy



Jennifer Miles was able to travel around the U.S. and Europe in her childhood due to her father's service in the Air Force. This gave her an opportunity to see many different cultures as well as the many areas of need. Jennifer is working towards helping to fill that need as she completes her Masters of Science in Occupational Therapy. She plans to graduate in December 2013 and hopes to start practicing soon thereafter.

Case studies within the medical field are used to perform "an in-depth study of a single unit" (Gerring, 2004). In most cases this unit is the client and a particular condition. Through an in-depth look at the beliefs and experiences, the conditions/diagnosis, and the current and future treatment options, the client can be seen as more than a number. Case studies are also a way to educate other professionals about the client's condition using a combination of qualitative data (how the client experiences life) and quantitative data (facts and numbers related to the client's condition).

In this case study, M, the individual whose "story" will be told, is a happy, energetic 10 year old female who has multiple diagnoses, yet is still able to function within her community settings with the help of family, friends, and an occupational therapist. M's main diagnosis of Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS) causes her to have difficulties in social situations. Her interests vary from year to year as is common with other children her age, but she is very focused on her areas of interest and shows high intelligence in those areas.

Personal Data and History

M, currently in 4th grade, is in a regular classroom in her local public school. She lives with her mother and enjoys playing with her dog and two cats (her sister recently moved away to college). She is currently interested in the presidents of the United States and anything plant- or tree-related. According to her mother, M has always been interested in the "history of her world" and why things are the way they are. She may become preoccupied with one particular topic and focus only on that topic. When this happens, she may repeatedly ask questions based on this subject, such as "what kind of tree is that?" or "can you eat clover?" M is not very interested in watching television as are many of her peers, but would rather read or do craft projects such as coloring. M has some difficulty with transferring from one event to the other and requires a lot of preparation for any transitions, including when the transition will occur and what might happen if the event doesn't happen exactly as planned.

Diagnosis

M's primary diagnoses of Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS), Anxiety, and Attention Deficit Hyperactivity Disorder (ADHD) can each cause difficulty in daily functioning, but when combined, they can cause severe limitations. M demonstrates symptoms from each diagnosis, yet (with a lot of assistance from family, friends, and medical professionals) she is able to function in the world around her.

Pervasive Developmental Disorder-Not Otherwise Specified

PDD-NOS is a diagnosis given to children who demonstrate some but not all symptoms of autism. Autism Spectrum Disorder (also known as Pervasive Developmental Disorder) encompasses five different types: Asperger's Disorder, Autistic Disorder (also known as classic Autism), Childhood Disintegrative Disorder, Rett's Disorder, and Pervasive Developmental Disorder-Not Otherwise Specified (or PDD-NOS). The etiology of PDD-NOS (as with all Autism Spectrum Disorders) is not fully known. Many researchers believe it may be caused by genetic factors; other researchers believe it is caused by environmental factors such as a lack of folic acid during the early stages of pregnancy (President and Fellows of Harvard College, 2011). The clinical course for PDD-NOS is difficult to determine, as it is different for each child. While a diagnosis of autistic disorder must meet at least six of the twelve explicit criteria, individuals receiving a diagnosis of PDD-NOS demonstrate more ambiguous criteria. These criteria may be a cause of the limitations in literature on this specific diagnosis, as children may demonstrate some symptoms, but the symptoms may not be presented clearly enough for the child to receive a specific diagnosis (De Bruin, Ferdinand, Meester, & Verheij, 2007).

The symptoms that may be seen in all of the Autism Spectrum Disorders consist of communication difficulties (both verbal and non-verbal), social difficulties (sharing emotions, maintaining a conversation, and awareness of others' thoughts and feelings), and routines or repetitive behaviors (an obsessive need to follow particular routes or schedules, repeating words or actions, or repetitive play) (De Bruin, Ferdinand, Meester, & Verheij, 2007; Tsai, 2003). This can be seen in M through her limited ability to maintain conversations with others, her limited eye contact while speaking, her failure to develop relationships with peers, poor coordination, and limitations in understanding when someone is joking or being sarcastic while talking. While M shows some symptoms of PDD-NOS, she also has a secondary diagnosis of Anxiety Disorder which causes even more difficulties.

Anxiety Disorder

Anxiety is a disorder with many subtypes, which can include but are not limited to Generalized Anxiety Disorder, Obsessive-Compulsive Disorder, Panic Disorder, Posttraumatic Stress Disorder, Social Phobia, and Specific Phobias. The etiology of anxiety is believed to involve genetics, environmental factors, and the client's physiological profile. Women are more likely to be diagnosed with this disorder than men, and association with traumatic events may trigger an onset of symptoms.

The clinical course for this disorder is not clear, as symptoms can fade or manifest throughout the client's lifetime, but it appears to be chronic. Symptoms often seen in individuals with a diagnosis of anxiety include, but are not limited to, being easily startled, difficulty sleeping, hand tremors, indigestion, cramping, constipation, diarrhea, exhaustion, difficulty with separation from parent, distressing thoughts, restlessness, fatigue, or physiological overreactivity (Reaven, 2009). M's anxiety causes her symptoms: difficulties in being separated from her parent; excessively fearful reactions to events; distressing thoughts; difficulty with her ability to concentrate; and disturbed sleep, restlessness, fatigue, or physiological overreactivity. M demonstrates many of these symptoms through her restless behavior and reported lack of sleep at night. M stated that on more than one occasion, her limited sleep at night was due to one of her cats. She also appears to have difficulty concentrating on tasks, which may be associated with her diagnosis of PDD-NOS or ADHD (De Bruin, Ferdinand, Meester, & Verheij, 2007).

Attention Deficit Hyperactivity Disorder

ADHD is the most common childhood disorder, according to the U.S. Department of Health and Human Services (2012), and can remain with the client through adulthood. It is a heterogeneous behavior disorder (Rogers, 2005) which is subdivided into three categories: predominantly hyperactive-impulsive, predominantly inattentive, and a combination of both inattentive and hyperactive-impulsive symptoms. There is no specific known cause for this diagnosis, but it is believed that genetics, environmental factors, brain injuries, sugar, and food additives play important roles (U.S. Department of Health and Human Services, 2012). Symptoms include impulsivity, inattention, and inability to control behaviors (Rogers, 2005). As symptoms are usually first evident between ages three to six (when children naturally show signs of impulsivity and/or distractibility), ADHD is difficult to diagnose (U.S. Department of Health and Human Services, 2012). The symptoms must persist for no less than six months in a way that interferes with occupations (Rogers, 2005).

While medications are used to treat the symptoms of ADHD, there is no cure for this diagnosis. However, through the use of both medications and education on controlling behavior and internalizing praise, both children and adults are able to function within their environments (U.S. Department of Health and Human Services, 2012). M's diagnosis of ADHD causes her to be easily distracted; have difficulty focusing, organizing and completing tasks; become bored quickly; have difficulty processing information; need to be constantly moving; interrupt conversations; and be very impatient. However, M is able to function in daily life through the use of both medication and education on behaviors.

Psychosocial Frame of Reference

Frames of reference are used by many occupational therapists in order to assist in planning treatment options for the client. Depending on the client's condition, the therapist can narrow the choice to particular frames of reference that pertain to the desired goals. These frames of reference vary from the Model of Human Occupation (which looks at the psychosocial aspects of the client) to the Neurodevelopmental Frame of Reference (which looks at the physical movements the individual makes).

Behavioral Frame of Reference

The Psychosocial frame of reference chosen for M is the Behavioral frame of reference, which focuses on observable and measurable actions done by the person. Behavior is believed to be learned from environmental factors, and adaptive behaviors (skills and behaviors that assist the person in functioning within his or her environment) are desired. Maladaptive behaviors (which cause obstacles for the person's ability to function) are believed to be caused by faulty learning and need to be overcome (Bruce & Borg, 2002). Through the use of positive reinforcements using items that M desires, yet are not readily available, appropriate adaptive behaviors may be able to be learned.

Strategies in this frame of reference also assist in eliminating M's maladaptive behaviors through the use of Differential Reinforcement of Appropriate Behaviors (DRA), which reinforces appropriate behaviors and ignores inappropriate behaviors. Differential Reinforcement of Other Behaviors (DRO) is another method in which reinforcement is given for appropriate behaviors (asking for a cookie) that are not associated with the maladaptive behavior (throwing things). Differential Reinforcement of Incompatible Behavior (DRI) reinforces adaptive behaviors that cannot be done during the maladaptive behavior (or is opposite of the maladaptive behavior); for example, a child who throws things is praised for nicely passing the salt during meal times. Finally, Extinction (or a planned complete ignoring of the maladaptive behavior) is another strategy to use. However, this strategy must be enforced by everyone involved in M's care despite the burst of increased maladaptive behaviors until they are extinct (Bruce & Borg, 2002).

One way in which maladaptive behaviors are assessed is by the ABC method. This method looks at the antecedent (A) or what is happening prior to the maladaptive behavior that may be causing it; the behavior (B) or the specific actions that are happening; and the consequence (C) or what happens after the behavior is presented (Bruce & Borg, 2002). An example would be if M was reading a book and her mother told her it was time to eat dinner. M might respond by coming to the kitchen and screaming to leave her alone; after this the mother may try to talk M into coming to the table. The A in this case would be M being called to dinner when she was reading; the B would be her verbal screaming; and the C would be her mother providing attention to M. While M has the right to food, drink, outside activity, etc., one strategy for reinforcing adaptive behaviors is a behavioral contract which includes a clear definition of who will do what and when. In this case M could have a behavioral contract that states she will come to eat dinner at 5:30 P.M. every night. If she follows the contract, she can earn a special privilege, such as ice cream or a visit to the zoo. This provides clear expectations and positive reinforcement of appropriate behaviors, as well as providing M the choice to earn the treat or not.

Observation of Evaluative Elements

Based on information provided by M's mother and personal observation, M's diagnoses impact many areas of her life and life skills. In the Occupational Therapy Practice Framework: Domain and Process (2008) (a guide for OTs to use when assessing a client's needs and abilities), each area of life is divided into individual categories: Areas of Occupation, Client Factors, Activity Demands, Performance Skills, Performance Patterns, and Context and Environment (American Occupational Therapy Association, 2008).

Areas of Occupation

Areas of Occupation look at how this particular client participates in life activities, areas the client currently participates in, and those he or she may wish to participate in for the future. These activities consist of Activities of Daily Living (ADLs) and Instrumental Activities of Daily Living (IADLs) (being able to care for one's body and the ability to support one's living in the community), Rest and Sleep, Education, Work and Play, Leisure, and Social Participation (American Occupational Therapy Association, 2008). M has difficulty with all aspects of this category.

Her ADLs and IADLs are impacted in that she has difficulty with personal grooming, feeding, communication management, health management and maintenance, religious observances, and shopping. Her sleep/rest are greatly affected due to her diagnosis of anxiety, and she has had some periods of little or no sleep at night. M also has difficulty with education, play, leisure, and social participation in that she prefers to sit quietly by herself with a craft or a book rather than engage in activities or conversations with others. When she does communicate with others, she may become "stuck" on one topic, and repeatedly return to aspects of this topic without realizing others may not be interested in the subject matter.

Client Factors

This category is of great importance to the OT in that it allows us to determine what is important to the client, as well as what their current ability is. Working with the client to create goals for their treatment has been found to provide the best possible outcomes, as both parties form a "Working Alliance" (Tickle-Degnen, 2002). The more information the OT may have concerning what the client may hold important, the greater their ability to present relevant treatment options and goals. Client Factors include Values, Beliefs and Spirituality; Body Functions; and Body Structures (American Occupational Therapy Association, 2008).

M has strong religious beliefs in heaven and God and enjoys going to the contemporary service provided at her church, where both she and her mother do not have to worry about M being a little noisy. M also has great interest in discovering how things work and why they work in that particular way.

M's body functions show both strengths and limitations. She has difficulty with attention, energy and drive, sleep, and coping behaviors if unexpected things happen, but she has a very good memory and can repeat both phrases and thoughts expressed by others months later. M has some difficulty with vision (cannot see without her glasses) and proprioception and has sensitivities to taste and textures. However, M has very good hearing. M also has some limitations in muscle tone and endurance.

Activity Demands

Activity Demands uses information gathered from the Client Factors category and looks at the actual objects used to perform the desired activities, as well as the space, social skills, sequence and timing, actions and skills needed, and the body functions and structures needed to carry out these activities (American Occupational Therapy Association, 2008).

M is a child being raised by her mother in a moderate-sized community, where she also attends school. Her grandfather and sister both visit occasionally, and M has some friends in this community with whom she will engage in some activities. M is also a member of Girl Scouts and participates in activities at her church. All of these give M a very specific list of needed skills.

Due to M's age, she requires the ability to function with peers in a classroom setting (including playground) as well as adults (teachers and other school staff). This means she needs to be able to communicate in an appropriate manner, engage in physical activities such as tag, swinging, etc., and concentrate on each educational subject in order to complete assignments on time. Due to M being young, she is often accompanied by her mother, sister, or teacher, but needs to be able to navigate both her school setting and her neighborhood. Added to this, she also needs to be able to wait her turn while in the checkout line and make appropriate choices in her activities while waiting (i.e., playing with her Nintendo DS instead of complaining). M may require longer times to process information or respond to questions (American Occupational Therapy Association, 2008).

Performance Skills

Performance Skills are the abilities the client actually has. These skills are seen by observing the client perform activities (American Occupational Therapy Association, 2008). M's motor skills have some limitations in that she becomes agitated when her first action does not achieve the reaction she wanted. She has limitations in endurance and tone as well as her ability to process the information she is receiving, which limit her ability to respond to obstacles in her path in time.

M also has some difficulty with emotional regulation in that she may be overly sympathetic in one instance, and (as her mother states) "rude" in another. Usually upon realizing the effect this might have on another person (make them sad, cry, etc.), she calms down and becomes sorry for her actions. But she has some difficulty judging the appropriateness of responses. She also has some limitations in creating novel play activities, as she prefers to read or draw. M has a habit of becoming excited when people come to visit her (especially if they are people she likes), and will crawl under her bed and scream until she is calmed down. M is able to manipulate the buttons on her Nintendo DS, but does have some difficulty with typing on a keyboard. Her ability to use a telephone is unknown, but she has expressed desire to do so.

Sensory Profile

The evaluation process for M is limited due to the setting where she was observed (a camp for children with Autism). The only assessment used in her evaluation was the Sensory Profile (which was filled out by her mother) and personal observation.

The Sensory Profile is a survey-formatted assessment that can be filled out by the client or client's parent/caregiver. This assessment was created by Winnie Dunn (1999) and is used for children both with and without disabilities. The reason for looking at the impact of sensory stimuli is the belief that if the body is over-stimulated, it will avoid activities ("stimuli") in order to calm itself down. On the other hand, if the body is under-stimulated, it will seek actions or sources which will provide the sensory input it needs/desires. These "stimuli" can often cause inappropriate or risky behaviors as the individual seeks to fill this need (Bundy, Lane, Murray & Fisher, 2002).

Based on the findings from the Sensory Profile, M has some auditory difficulty, as she can be distracted in noisy environments and will not always respond when spoken to. M also has trouble with emotional response as she has difficulty in tolerating changes and managing behaviors, which could be due in part to low self-esteem and anxiety. M is sensory-seeking in her oral and olfactory senses, but sensory-avoiding in grooming and self-care activities.

Psychological and Social Factors and Impact on Therapeutic Intervention

M has had multiple changes to her life within the past year. Her grandmother passed away not long ago, and her sister graduated from high school and has moved to a college campus three hours away. This sister was very close to M, and this adjustment has been very hard for her. She had been reported by her mother as being increasingly verbally abusive toward her grandfather and others around her, as well as very short-tempered. These psychological factors along with M's PDD-NOS diagnosis (especially the limited eye contact when talking to others) have impacted her ability to interact in social situations. She has since begun to regulate her behaviors through her mother's use of cue cards and "earning a prize" when going places.

M also has difficulty with not interrupting others who may be talking to her, or with another person in the group. She does not seem aware that others are talking when she interrupts, and when it is brought to her attention, she seems surprised and/or confused by this information. She also requires reminders to lower her volume, as she can become very loud when talking (especially when she is excited). These two factors also can cause limitations in her ability to interact with others, as she does not "take turns" in conversations all the time, and this intermittent interrupting can cause others to not want to socialize with her.

M is also very sensitive to the feelings of others when it is brought to her attention. When walking through a butterfly house, she noticed one of the butterflies was dead and began to cry and loudly say "Oh No!" She then attempted to pick the dead butterfly off the ground as if to hug it and required a verbal reminder of germs before she stopped this attempt. She also would become emotional when another person would mention a family member being ill. This sensitivity is an asset in treatment, as she cares for others' feelings, but it can cause limitations, as this is not always demonstrated in an appropriate manner.

Pharmacological Assessment and Impact on Therapeutic Intervention

Vyvanse (lisdexamfetamine) was prescribed to assist M in controlling the symptoms of her ADHD diagnosis (i.e., difficulty maintaining focus, controlling actions, etc.). This medication may become habit-forming, and overuse of this medication may cause difficulty with falling asleep or staying asleep, irritability, hyperactivity, changes in

behavior or mood, and even heart attacks or stroke. Other side effects that may impact therapeutic interventions include dizziness, drowsiness, headache, nausea, vomiting, fever, stomach pain, and diarrhea. Serious side effects include chest pains, shortness of breath, difficult speech, seizures, aggression, irritability, blurred vision, weakness in arms or legs, and hallucinations (AHFS Consumer Medication Information, 2010). M's mother stated this medication is a "life saver," as it increases M's ability to concentrate.

Zoloft (sertraline) was prescribed to help control M's anxiety symptoms by increasing the serotonin in her brain. As this is a form of antidepressant, the client should be monitored for suicidal thoughts. Common side effects that may hinder therapy treatments include nausea, diarrhea, vomiting, drowsiness, dizziness, headache, and burning in hands and feet. Serious side effects include blurred vision, seizures, confusion, rapid heartbeat, severe muscle stiffness, and hallucinations (AHFS Consumer Medication Information, 2012). M's mother reports Zoloft has "greatly reduced" her anxiety.

M also takes an herbal supplement, Melatonin, for her sleep problems (insomnia). Side effects of this medication that may impact therapy interventions include drowsiness, nightmares that may influence rest times, and potential increase in depression/anxiety symptoms (University of Maryland Medical Center, 2011). M's mother reported this medication is used to help M "to relax and to sleep better."

Treatment Plan

In occupational therapy, the foundation of the treatment plan is the client's current abilities and strengths (assets) as well as areas of difficulty or problems. Once the most important aspects are specifically identified, the goals can be created. Both short-term and long-term goals are written, and the short-term goals are often used as stepping stones to reach the long-term. This way the client can see the progress he/she is making in the short term (so he/she does not become discouraged), while still being encouraged to achieve the long term goal.

M's Assets/Strengths List

1. Very intelligent and informed about topics such as plants, animals, and the presidents of the United States
2. Able to verbally communicate when she feels comfortable with a person
3. Strong support system.

M's Problem/Difficulties List

1. Difficulty focusing/concentrating on a task
2. Sensory avoiding in personal grooming activities
3. Emotional regulation limitations when unexpected events happen.

M's Short-Term Goal

1. M will demonstrate the ability within 1 week to wait patiently in the checkout line with 3 or fewer expressions of displeasure using her Nintendo DS and fewer than 3 verbal cues.

M's Long-Term Goal

1. Within 4 weeks M will demonstrate the ability to wait patiently in the checkout line with no more than 1 expression of displeasure using no more than 1 verbal cue and her Nintendo DS.

Past and Current Treatment Methods/Interventions

Occupational therapy interventions used with M included implementation of an "earn a prize" strategy, with which she would wait patiently with some cueing in order to

earn money toward an item she wanted to buy. M also required verbal cues as to when to transfer to another subject. M engaged in both gross motor and fine motor activities in which she had to follow directions in a certain order and wait her turn. Through the implementation of these occupation-based interventions, M was able to participate with the adult leaders in the camp, and for short intervals the other campers, with no more than 3 verbal cues needed.

Current treatment methods for M are not known, based upon the setting in which she was observed. However, her mother reports she is currently trying the "earn your prize" method in which M must wait patiently with a toy and only verbal cues while her mother runs errands and does grocery shopping. If M does this for the specified time, she earns money which she can use to purchase items she wants. However, if she becomes rude or out of control in her behavior, she does not earn any money, and may have money taken away.

Recommended Treatment Methods/Interventions

A recommended treatment intervention for M would be engaging in a social skills group. This would involve a structured program in which specific goals are made known (such as social engagement and communication skills) but are adapted to the current skill levels of the participants. Part of this intervention would include providing problems for the children to solve together, as this is a very important skill they will need to have in order to transition between activities (including unexpected transitions). Sessions usually include a period when each person greets other group members, asking questions about how that person is doing, much like individuals may do when conversing with friends. This is mediated by the therapist who uses verbal prompts in guiding the question/answer times. Game-based learning activities and modeling by the therapist are also used to provide concrete appropriate behavior examples for the children. Engagement in this intervention is supported by the children earning points toward a reward at the end of the session. There is also a time once a week in which the parent has a one-on-one meeting, to receive some training on how to carry over this teaching into the child's daily life (Freedman & Silverman, 2008).

One specific program (the Social Skills Group Intervention-High Functioning Autism model) has a curriculum in which specific modules are used each session, including a specific session each week that includes the parent. This program has been shown to be effective in increasing social skills in children with higher functioning autism, and parents reported an increase in feelings of self-efficacy through their involvement in their child's sessions (Derosier, Swick, Davis, Mcmillen, & Matthews, 2011).

Other Services Involved and Referrals Recommended

In the past year M has received speech, occupational, and physical therapy services. However, M is currently receiving only consultation services from the occupational therapist at school, despite already having to receive interventions for her typing skills this quarter. She is receiving continued physical therapy for areas such as balance and endurance as well as low muscle tone. M's mother reported M has increased her verbal communication overall, but she is still more verbal with adults than with peers.

M was involved this summer in a day camp program designed for children with Autism Spectrum Disorders. At camp, M received social interaction with other children with Autism, as well as peer mentors who were used to model appropriate behaviors. She also interacted with adult leaders who were occupational therapy students, and one occupational therapist and one special education professional. Interventions/activities provided at camp included gross motor activities such as walking/running through an obstacle course, relay water games, etc., that were also used to teach/reinforce the need to wait patiently until it was her turn. Fine motor activities were her favorite time, as she really enjoys creating crafts and drawing/coloring. Activities she participated in included using

scissors to cut along straight lines, molding play dough, gluing sea shells, peeling the backs off stickers, and using finger-paint to create a mural. There was also a sensory time in which M was allowed to engage in any activity, including swinging, the ball pit, or the trampoline. However, M's preferred activity during this time was sitting in a corner reading the note her leader wrote to M's mother about how M's day had gone.

Discharge/Transition Plan

M will continue to participate in her daily activities at both school and home. She will continue to receive services as needed in her public school setting as determined by her IEP. She will continue to receive medication to treat the symptoms of her diagnosis as determined by her doctor. M will also return to Camp Cardinal Kids next summer for her last year.

Conclusion

As can be seen in this case study, a diagnosis alone does not begin to describe M. Thus an in-depth look at where she lives, whom she interacts with on a daily/weekly basis, what she can do, and what she currently needs to do and will need to do in the future are all important aspects when creating a treatment plan for her. Occupational therapy is able to look at each of these areas in detail in order to determine both the client's strengths and areas of difficulty in order to achieve the client goals. Hasselkus (2006) stated that "in the unique and small experiences that comprise each individual's daily life," the OT is able to find a greater understanding of the "lived" experience. This is the true purpose of the case study.

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