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DISCUSSION AND REVIEW PAPER

Ethical Considerations for Interdisciplinary Collaboration with Prescribing Professionals

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Abstract Behavior analysts often work as part of an interdisciplinary team, and different team members may prescribe different interventions for a single client. One such intervention that is commonly encountered is a change in medication. Changes in medication regimens have the potential to alter behavior in a number of ways. As such, it is important for all team members to be aware of every intervention and to consider how different interventions may interact with each other. These facts make regular and clear communication among team members vital for treatment success. While working as part of an interdisciplinary team, behavior analysts must abide by their ethics code, which sometimes means advocating for their client with the rest of the team. This article will review some possible implications of medicinal interventions, potential ethical issues that can arise, and a case study from the authors' experience. Finally, the authors propose a decision-making tree that can aid in determining the best course of action when a team member proposes an intervention in addition to, or concurrent with, interventions proposed by the behavior analyst.

Keywords Interdisciplinary treatment · Ethical considerations · Behavioral interventions · Medications

Imagine being a mental health professional, visiting a long-time client, Mark, at his adult foster care home. While working with Mark, you have helped him learn appropriate behaviors to use in aversive situations, along with supporting his staff in navigating through these target behaviors. In the two years you have worked together, Mark has never turned down a visit, and always greets you with a smile; however, today, Mark is quiet and even asks to leave the visit early. When he leaves the room, you look to Mark's staff for answers. Staff launch into a diatribe of "new" behaviors that have suddenly been occurring over the last week, "He's angry all the time, and he's even refusing medications now." Another staff chimes in, "He keeps making negative statements about himself and even talks about hurting himself. It just doesn't make any sense!"

As any professional in this situation, you begin asking questions to assess the situation and try to determine exactly where things started to go awry. Staff explain that there have not been any schedule or staff changes, Mark has not been sick, and there is *nothing* that has changed that would affect him this way. Staff report it seems like he simply changed "overnight"; one staff even said that it was as if a "switch had flipped." Confused by this situation, you ask once more about Mark's health. You ask staff about any unusual visits to the doctor, and a staff member suddenly lights up, "You know—when Mark asked the doctor last week for help with his temper, she doubled his normal antipsychotic, do you think that could be a factor?"

The scenario above, and situations like it, is a common occurrence for mental health professionals engaged in interdisciplinary assessment and treatment. When considering clinical professionals that provide services to clients with mental disabilities, medical physicians, psychiatrists, psychologists, and behavior analysts are only a few on the list of individuals interacting with the client on a regular basis. Each professional role has its individual code of ethical guidelines, regulated by each profession's certification or licensing board. With interdisciplinary treatment, it is important to consider all ethical codes when delineating who will provide

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which services and when. The ethical guidelines also aid professionals when identifying the best ways to interact with each other professionally. Unfortunately, these guidelines, while based on research, often leave gaps in outlining interactions among members of the interdisciplinary team across different clinical methodologies.

In an advancing society, ethical standards of each mental health profession are regularly evolving in order to meet the needs of the current treatment climate. Specifically, behavior analysts, although more novice in establishing the ethical standards for their field, highlight the importance of a global approach to behavior analytic interventions (Bailey & Pyles, 1989). While behavior analysts often attend to antecedent and consequent events, it is important for them to be regularly sensitive to the multiple antecedent events that can affect behavior outside of the scope of their individual practice. These antecedents include medications, as well as other combination therapies and interventions in an interdisciplinary approach to treatment.

In order to collaborate effectively, it is important to be familiar with the ethical standards of practice that guide medical physicians, behavior analysts, psychologists, psychiatrists, and other professionals who work as consistent members of the client's treatment team. Each discipline offers a unique skill set, specialized training, and a specific approach to treatment. As such, it is important to consider each field when creating a framework for interdisciplinary treatment. The purpose of the current discussion is to highlight the relevant literature related to interdisciplinary treatment, review the current ethical standards of mental health professionals, examine a case example to highlight relevant concerns, and outline potential future directions to enhance the current and future practice of mental health treatment teams who are providing interdisciplinary treatment. Furthermore, the current paper will offer a decision-making hierarchy for interdisciplinary teams to employ when determining the most appropriate and evidence-based treatment interventions for their clients.

Effects of Pharmacological Interventions on Motivation and Behavior

In particular, pharmacological interventions can affect the behavior of individuals and, in turn, affect concurrent behavior interventions. Behavior analysts are ethically required to provide function-based assessment and evidence-based interventions and continually monitor progress in the context of interventions (Behavior Analysis Certification Board, 2014). With the addition of medication modifications during treatment, we must monitor and assess in even greater detail. Modifications to medications may cause unobservable biological changes that affect behavior. Early detection allows therapists to make appropriate adjustments to interventions to ensure the best possible treatment and outcomes. Assessments behavior analysts would normally conduct prior to the start of treatment (e.g., components of a functional assessment) may need to be conducted several times throughout a pharmacological regimen until some level of stability is achieved (Crosland et al., 2003; Valdovinos, Nelson, Kuhle, & Dierks, 2009). Related to behavioral interventions, researchers have investigated the effects of pharmacological interventions on changes in the value of reinforcers, as well as changes in the function and frequency of behavior (Fisher, Piazza, & Page, 1989; Hoza, Pelham, Sams, & Carlson, 1992; Northup, Fusilier, Swanson, Roane, & Borrero, 1997; Larue et al., 2008). The effects are not always detrimental, but do highlight the necessity for continuous monitoring of these interventions and relevant behavior changes to determine the need for any adjustments. An analogous example in the medical field would be the prescription and monitoring of allergy medications. Individuals may already have issues related to blood pressure and must report this to the physician because this would impede the prescription of allergy medications that may further increase blood pressure. The individual must also continue to report side effects of medications, such as headaches, changes in appetite, or fatigue, after a prescription is in place. The physician would then make changes, such as amount or time of dosage, to the medical intervention to alleviate these effects.

Valdovinos and Kennedy (2004) provide a behavior analytic conceptualization of the potential side effects of pharmacologic treatments on behavior interventions. They describe how medications may act as motivating operations; for instance, one side effect may be appetite suppression, often associated with the stimulant methylphenidate. For example, methylphenidate may decrease the effectiveness of edible reinforcers as the individual is no longer motivated by food. While non-edible reinforcers may be more appropriate reinforcers overall, if an edible stimulus is being used as a reinforcer, it would be important to identify any changes in motivation with respect to edibles as soon as the change occurs. Otherwise, the therapist may assume problems with the behavioral intervention when it is indeed successful. Furthermore, medications may alter discriminative or conditional stimulus control. Side effects such as fatigue or pain may act as discriminative or conditional stimuli that may evoke unusual behavior (e.g., avoidance, escape, engagement) as compared to behavior prior to medication changes. An example of this change may be associated with the side effect of fatigue often related to benzodiazepines and antihistamines. The individual might have difficulty staying awake; vision and other senses could be impaired and cause avoidance of demands. Finally, Valdovinos and Kennedy (2004) discuss how possible effects on response-reinforcer relations can occur. The side effects can act as positive or negative reinforcers or punishers and further affect application of the medication.

An example may include the side effect of nausea that causes an individual to stop taking medication to prevent effects, which would result in negative reinforcement. Alternatively, an individual might find a medication causes muscle relaxation as a side effect and may take more medication than necessary to increase the effects (positive reinforcement) (Valdovinos & Kennedy, 2004).

Researchers have investigated the components described above to analyze the effects of medication-specific changes on reinforcer effectiveness and how to assess them accurately. During medication changes, individuals have been shown to select alternative reinforcers (e.g., toys instead of edibles, play with others instead of play alone) to those indicated during original baseline or placebo assessments (Northup et al., 1997; Larue et al., 2008). Reinforcer assessments can be utilized to determine changes in reinforcer preference as a result of pharmacological intervention.

An additional way to assess the side effects of medications is through experimental analysis during assessment procedures. For example, functional analyses can be conducted throughout pharmacological treatments to determine the effects of various levels of medication on both frequency and function of behaviors. Crosland et al. (2003) found that the pharmacological intervention of risperidone affected participants differently across conditions (e.g., attention, demand, and tangible), as well as across topographies of behavior (e.g., self-injurious behavior versus aggression toward others). The participants varied in frequency of problem behavior during conditions, and one participant changed topography of behavior due to medication changes. Valdovinos et al. (2009) also utilized this type of assessment and found similar results. Changes were not consistent across individuals and varied across conditions of the assessment and levels of medication administered. Functional analyses may also be utilized to determine behavioral effects of behavior interventions alone or in combination with pharmacological interventions (Fisher et al., 1989; Hoza et al., 1992). If the changes in medications are known, reinforcer assessments, as well as functional analyses, may need to be conducted immediately. If the changes are unknown, the behavior analyst may mistakenly provide ineffective intervention(s) for an extended period of time.

Efficacy of Pharmacological and Behavioral Interventions

In addition to research demonstrating effects of medication on motivation and behavior, many studies have been conducted to directly compare medications to other treatments. Although no studies exist that directly compare medications to treatments that are solely based on applied behavior analysis, several studies have compared medications to placebos, cognitive behavioral therapy, and combination treatments. Such studies are still important to be familiar with and understand for several reasons. First, they can help professionals to understand the potential advantages and disadvantages of pharmacological interventions. Second, cognitive behavioral therapies often contain components of applied behavior analysis, and the procedures and effects of such therapies can be interpreted using the principles of behavior.

One such comparison study, the Child-Adolescent Anxiety Multimodal Study (CAMS), compared the efficacy of sertraline, a selective serotonin reuptake inhibitor (SSRI), to three other treatment conditions: cognitive behavioral therapy (CBT), pill placebo, and combination of sertraline and CBT (Piacentini et al., 2014; Walkup et al., 2008). Medications were regularly monitored and titrated based on reported anxiety levels during monitoring visits. CBT included anxiety management and behavioral exposure. Treatments were administered for 12 weeks, and measures of symptom frequency and severity and adverse effects were obtained pre-treatment and after 4, 8, 12, 24, and 36 weeks. Subjects were 488 children and adolescents between the ages of 7 and 17 years with diagnoses of separation anxiety disorder, generalized anxiety disorder, or social phobia.

Initially, the group that received both sertraline and CBT displayed the greatest improvement, followed by the CBT-only group and then the sertraline-only group. Over time, the other groups began to show more improvement as well, but after several weeks, the medication-only and combination groups began to demonstrate a worsening in symptoms again, while symptom measures of the CBT-only group began to stabilize. This latter group also experienced the fewest number of physical side effects throughout the study.

Patterns similar to those seen in the CAMS can be found in other comparison studies (Garcia et al. 2010; MTA Cooperative Group 1999; Murray et al. 2008; TADS Team 2004). For example, the Multimodal Treatment Study of Children with Attention Deficit/Hyperactivity Disorder (MTA) compared titrated administration of methylphenidate hydrochloride to behavioral treatment, a combination of medication and behavioral treatment, and community care (i.e., treatment as usual, in which the subject's families were given a list of resources available in the community and sought treatment through other providers in their community (MTA Cooperative Group, 1999; Murray et al., 2008). This study found that the combination treatment (medication and behavioral treatment) had a greater effect in the early weeks of the study, but differences in effect decreased until there were no longer any significant differences between groups in symptom improvement. Adverse effects varied by group, but were greater for the medication-only group, which was also associated with a slowing of physical growth in comparison to the other groups.

There are often several limitations to such comparison studies. First, they frequently have strict inclusionary and exclusionary criteria that limit the generalizability of such studies to other populations (e.g., populations with comorbid

diagnoses or with lower socioeconomic status). Additionally, measures are often based on informant report from both the subjects and their parents, which means direct measures of symptoms are lacking. These limitations point to a need for more objective measurements and for carefully monitoring treatments with individual clients, especially clients who differ substantially from the available studies.

In contrast to the studies described above, very little evidence is available to support the use of drug treatment in children with autism spectrum disorders. Yet, the authors often encounter clients diagnosed with autism who are prescribed some medications. McPheeters et al. (2011) conducted a review of medical treatment studies for children 12 years old or younger with autism and found that some evidence exists to support the use of titrated risperidone and aripiprazole for decreasing challenging and repetitive behaviors; however, both medications were also associated with significant adverse effects, such as weight gain and sedation. Insufficient evidence was found for efficacy in symptom improvement or for adverse effects of other medications for children with autism. In contrast, a variety of large-scale studies have provided support for the long-term efficacy of behavioral treatments in improving symptoms of autism, and these treatments are not associated with a high risk of adverse effects (e.g., Dawson et al., 2010, 2012; Eikeseth, Smith, Jahr, & Eldevik, 2007).

These examples illustrate several other considerations that must be taken into account when behavior analysts work with a client alongside a prescribing professional. Behavior analysts may be able to help provide objective measurements of symptoms or behaviors the prescribing professional hopes to address with the medication, including data from multiple environments and in comparison to behavioral interventions, which will aid in making data-based decisions regarding client treatment. Another consideration involves weighing the advantages and disadvantages of different treatments before deciding on the best course of action. Behavior analysts and prescribing professionals can work together to do so and should consider not only potential effects on the targeted behaviors but also adverse side effects, impact on motivation and other factors, time and cost of implementation, and client or guardian preferences. Researchers throughout the literature stress the importance of collaboration between medical professionals and behavior analysts, as it may be detrimental to the client to work independently (Valdovinos et al., 2009). Professionals can share information about relevant interventions to assist one another in choosing the best possible treatment based on repeated assessments for the individual involved.

Ethical Guidelines

The authors reviewed the American Medical Association's (AMA) *Medical Code of Ethics*, the American Psychiatric Association's *Principles of Medical Ethics With Annotations Especially Applicable to Psychiatry*, the American Psychological Association's (APA) *Ethical Principles of Psychologists and Code of Conduct*, and the Behavior Analyst Certification Board's (BACB) *Professional and Ethical Compliance Code for Behavior Analysts* in order to identify the standards of care related to consultation with multiple professional agencies. These codes were selected for review, as behavior analysts often collaborate with these professionals on global treatment decisions in consultative, interdisciplinary care. The codes were also reviewed to determine the guidelines for collective recommendations for treatment (as well as any changes made to treatment) among mental health professionals. Identifying the similarities and differences in core values for each member of the interdisciplinary team will enhance collaborative discussion and aid in treatment accountability overall (Vinokur-Kaplan, 1995).

Throughout each code of conduct, there is an overarching echo of "do no harm." Each profession supports the mission that in all services delivered, it is most important to keep the client's well-being and safety at the forefront of treatment. In collaborative treatment, this means striving for the most appropriate and effective combination of treatment and sometimes peer review (American Psychiatric Association, 2001). Professionals involved in each case will need to notify relevant treatment team members of changes in medication regimens, therapies, or programming. As noted above, communicating these changes is essential to avoid any problems that could arise from contraindicated interventions.

Additionally, all codes of conduct discuss their responsibility to the client. Responsibility is an umbrella term used for a number of professional obligations to the client, but it ultimately means that mental health professionals advocate for their clients' overall well-being. This charge also specifies that professionals are mandated to report any concerns of harm or ethical violations that may occur during treatment (American Psychiatric Association, 2001; American Psychological Association, 2007; Behavior Analyst Certification Board, 2014). One responsibility of mental health professionals is that they only work within the boundaries of their competence. This is one reason why collaborative care is so important (Behavior Analyst Certification Board, 2014). Professionals should communicate with one another about treatment, but ultimately defer specific decisions to the professionals with the most expertise and training in a given treatment area (e.g., when medications are prescribed by a psychiatrist or medical physician, the decision should ultimately be made after a discussion with the overall treatment team, so that an informed treatment decision can be made about how that change may affect other current treatments) (American Psychological Association, 2007).

Specifically, the codes of conduct for both the APA and the BACB stress the need for assessment and collaboration in

treatment. They purport that treatment should be individualized to each client, based on their specific needs. Precise examination and assessment provide information needed to prescribe appropriate interventions. Furthermore, both encourage consultation with medical professionals in order to provide the client with the most conclusive and effective treatment. Medical professionals are often able to rule out and identify health-related and biological concerns that can impede behavioral or psychological treatment (American Psychological Association, 2007; Behavior Analyst Certification Board, 2014).

Case Example

To illustrate the points above, the comprehensive case example below highlights the potential ethical dilemmas faced and how the authors handled them throughout the assessment and intervention process.

The authors received a referral for a preschool-aged child with diagnoses of autism spectrum disorder, attention deficit hyperactivity disorder (ADHD), hoarding disorder, and bipolar II disorder. The child, whom we will refer to as Jason for our purposes here, was originally referred to our treatment team for behavioral services due to erratic sleep patterns affecting activities of daily living. We intended to begin the assessment process by conducting functional assessment interviews and direct observations and by training caregivers to collect relevant data on target behaviors. Multiple medication changes occurred during the assessment period, each followed by drastic changes in behavior. Behavior problems no longer included just erratic sleep patterns but also severe self-injurious behavior and physical aggression toward others.

During this time, it was important to maintain communication among the entire treatment team to ensure everyone was aware of each intervention change and following changes in behavior. Ongoing assessment allowed the behavior analyst to notice behavior changes and extend assessment until stability in data could be achieved. During the continuous assessment, Jason was hospitalized twice in an attempt to stabilize his behaviors, so that the guardian would feel comfortable bringing him back to the home environment. During his time at the hospital and following his discharge, new prescribing professionals were added to the treatment team including a hospital physician and an additional psychiatrist. Along with the addition of new members to the treatment team, also came the addition of new perspectives and intervention methodologies. In an attempt to provide ethical evidence-based treatment according the BACB guidelines, the authors monitored the pharmacological and relevant environmental changes through data collection and record reviews. Each change was noted through a phase change in a visual graphic display of each target behavior to display during group treatment team reviews. Continuous communication continued to be required across the treatment team of prescribing professionals, BCBA, and guardians to advocate for the client to receive the best possible interventions. When possible, communication occurred in person with the guardian, but most communication time was spent sharing information via phone calls and emails, multiple times a week with the entire treatment team.

The assessment process has continued throughout intervention as pharmacological changes continue to occur regularly with a plan to fade medication dosages over time. We requested monthly medication reviews as part of the behavior plan, as any changes or side effects will likely impact behavioral services. Meetings have also been arranged where the individual's treatment team (case managers, staffing agency, BCBA, and guardian as necessary) meets twice a month to review any concerns related to the individual. These meetings allow for in-person timely communication without the barriers of email or phones. We continue to strategize to make necessary changes to the intervention environment to account for changes in motivation and preferences due to the possible pharmacological side effects. While deciding on these changes, we have continued to advocate for compatible and evidence-based interventions for the client.

Recommendations for Practice

In consideration of the current research, ethical guidelines, clinical practices, and case examples presented, the authors feel there are a number of ways to enhance interdisciplinary treatment. Models for interdisciplinary treatment have been proposed throughout the literature, such as the Checklist for Analyzing Proposed Treatments (CAPT) (Brodhead, 2015). The current authors are presenting an alternative model with specific considerations and strategies based on what we have found to be most beneficial in current practice, specifically when collaborating with prescribing professionals. Figure 1 outlines a decision-making hierarchy the authors propose for use when making decisions during interdisciplinary treatment. The development of this decision-tree occurred through ongoing examination and documental commonalities across several case interactions, considering ethical obligations, and consulting with other professionals in the field. A more in-depth description of this decision-making tree follows.

Universal Strategies

It is important for all members of a treatment team, including behavior analysts, psychiatrists, general health providers, other therapists, caregivers or guardians, and the client, to regularly communicate with each other and to be aware of intervention changes made by any member of the treatment team (American Medical Association, 2007; Behavior Analyst Certification Board, 2014). A number of universal strategies

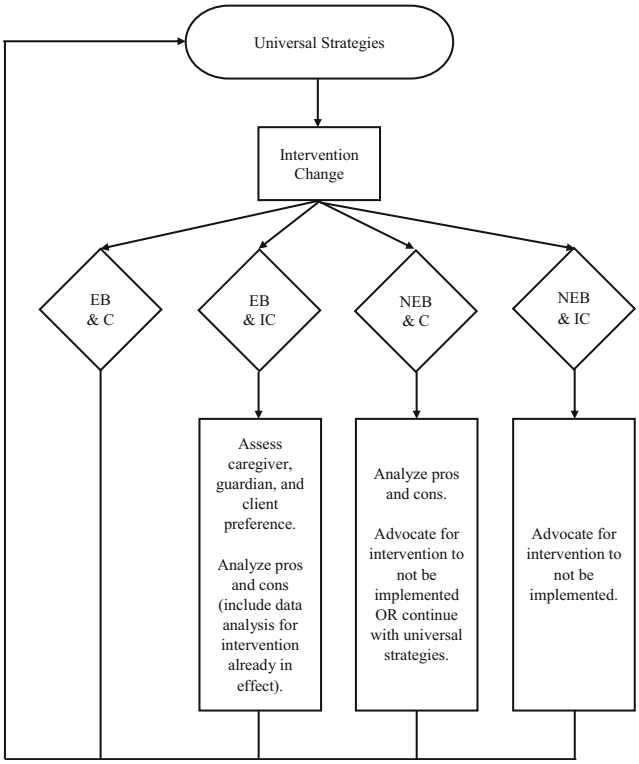

Fig. 1 Decision-making process for ensuring intervention compatibility and use of evidence-based interventions. *EB* evidence-based, *NEB* not evidence-based, *C* compatible, *IC* incompatible

can be used to accomplish ongoing, clear communication among all team members.

First, at the onset of treatment, a system should be established to promote regular communication between treatment team members. This could include establishing a regular meeting schedule or creating an email group to send notice of any intervention changes when they occur. During all meetings, either with the treatment team in its entirety or with individual members of the treatment team, the authors have a set of questions that they ask as part of their standard practice, which includes questions regarding any symptom changes, health changes, or intervention changes (see the Appendix for an example tool). During these meetings, if routine questions for progress monitoring signal a need for further assessment, professionals can consider utilizing more formal assessment methodologies as a part of typical functional behavior assessment (O'Neill, Horner, Albin, Storey, & Sprague, 1996).

Second, all members of the treatment team should receive some education regarding any intervention changes. At a minimum, the provider implementing the intervention change should provide information regarding the purpose of the intervention (i.e., what symptoms or behaviors it is intended to address), a brief description of what the intervention is, what behavioral or other symptom changes are expected (including both desirable effects and potential side effects), and the degree of research evidence supporting the use of the intervention. The provider should ensure that this information is communicated in a manner that is accessible and understandable to all members of the treatment team. The creation of consumer guides or pamphlets may assist with these descriptions (Schall, 2002). The provider must also determine whether some members of the treatment team may need more than this minimal information. For example, caregivers may need more intensive training if they will be responsible for implementing the intervention.

Third, all interventions must be monitored together, not separately. Behavior analysts can accomplish this by providing notation in their visual display of the relevant data, along with notations for interventions they prescribe. When these data are analyzed, trends can be identified in relation to all interventions, not just those prescribed by the behavior analyst. These graphs should be made regularly available to other members of the treatment team, along with explanations on how to read and interpret the graphs. Finally, the authors advocate that intervention changes not be made unless the data show a need for a change (e.g., data do not stabilize after implementation of an intervention, data are stable but not increasing or decreasing in the desired direction), or other circumstances arise that suggest a change is needed, such as a move to a different type of environment or a change in staffing ratios.

Intervention Changes

By following the universal strategies described above, all members of the treatment team will be aware of all components of treatment and can determine how their interventions may fit in with the interventions proposed or implemented by other treatment professionals. Anytime an intervention is introduced, changed, or removed, it is important to consider how this change impacts the other interventions that are part of the comprehensive treatment plan. Behavior analysts focus on two aspects of each intervention change when we decide how to proceed after an intervention change: whether or not the intervention change is supported by research evidence and whether or not the intervention change is compatible with other interventions that are included in the treatment plan.

To determine whether an intervention is evidence-based, the authors recommend first consulting with the provider advocating for the intervention. Behavior analysts sometimes supplement this by consulting with other treatment professionals in the same field and often consulting the literature to identify research supporting the use of the intervention. We utilized this specific strategy with the case example by consulting medical literature on use of the pharmacological interventions with children of Jason's age. Common uses, dosages, interactions among medications, and side effects of these medications were among the topics researched. Finally, individual

client data can also be used to help determine the evidence base for an intervention for that specific client.

To determine whether an intervention change is compatible with other interventions, the authors recommend checking for both compatibility of goals and compatibility of intervention methodologies. Goals are typically compatible if they both promote positive outcomes for the client and conform to goals previously agreed upon by the treatment team. Methodologies are compatible if it possible to implement both interventions concurrently and if the methods of one do not interfere with being able to carry out the methods of another. Below are descriptions of the recommended behavior analytic responses to whether the intervention change is evidence-based and compatible with other interventions, evidence-based and incompatible with other interventions, not evidence-based and compatible, or not evidence-based and incompatible.

Evidence-Based and Compatible

If an intervention change is both evidence-based and compatible with other interventions, the authors recommend continuing to use the universal strategies outlined above and to not make any other changes. The exception would be if implementing two interventions proves to be too time-consuming or challenging for caregivers, in which case behavior analysts should work with the treatment team to determine which one of the interventions should take priority and be implemented. Making this determination often involves asking caregivers, clients, and guardians for their preference and performing a "pros" and "cons" analysis of the interventions. For example, a behavior analyst may be working with an individual with autism, and a nutritionist may prescribe a specific diet for the individual to promote digestion and healthy bowel movements. The diet is evidence-based for the treatment of digestion issues and does not impact the behavioral interventions.

Evidence-Based and Incompatible

If an intervention is evidence-based but incompatible with other interventions that are part of treatment, the treatment team must determine which intervention should be tried first. It is also beneficial to check for caregiver, guardian, and client preference when making this decision and to analyze the pros and cons of the intervention choices. When analyzing the pros and cons, look at potential benefits, potential adverse effects, intrusiveness, and feasibility or ease of implementation. If one intervention is already in place, also analyze the data relevant to that intervention and incorporate the observed effects into the pros and cons analysis. For example, for a client who is struggling to manage anxiety, the treatment team may work to train coping methods and teach the client to self-assess ongoing levels of anxiety. Then, another member of the treatment team recommends adding an "as needed" anti-anxiety medication in order to help the customer "get by" while learning coping skills. While both treatments are evidence-based, they may be incompatible as one may cancel out the effects of another, or medications may detract from current motivation to participate in coping skills training. Over time, learning to self-assess levels of anxiety and strategies for coping with that anxiety frees the client from reliance on a medication regimen for anxiety and may prove to provide a less intrusive and more sustainable treatment alternative for the client.

Not Evidence-Based and Compatible

If an intervention change is not evidence-based but is compatible with other interventions, the authors recommend either meeting with the provider or treatment team to advocate that the intervention not be implemented or continuing with universal strategies to monitor the effects. This decision is also based on a pros and cons analysis. Examples of situations in which behavior analysts may want to advocate for the intervention to not be implemented include when there is a potential for it to be harmful to the client or when it is time-consuming to implement (in which case resources may be better directed to evidence-based interventions). Behavior analysts may continue with universal strategies if the intervention is not likely to be harmful or to consume too many resources or if there is some preliminary evidence showing the intervention may be effective in at least some cases. For example, one author worked with an individual whose guardian requested prescriptions for vitamins, in the hopes that the vitamins would improve the symptoms of her child's autism. Although there was no evidence to suggest the vitamins would affect her behavior or social skills in such a way, the vitamins would not affect motivation or other aspects of her behavioral interventions, either, and was therefore still compatible with the rest of the client's treatment plan. The prescribing professional decided to write the prescription for vitamin supplements based on it being consistent with the guardian's values and preferences and due to it not having harmful side effects.

Not Evidence-Based and Incompatible

If an intervention change is not evidence-based and is incompatible with the implementation of other evidence-based interventions, meeting with the treatment team to advocate for the intervention to not be implemented is strongly recommended. Behavior analysts should first try to talk to the provider recommending the intervention and then meet with the entire treatment team if the provider continues to recommend the intervention. It can be useful in such situations to present the treatment team with research or client data to support this recommendation and to present alternative options that may also be appealing to the provider who recommended the

intervention of concern. For example, when an addictive sleep medication was prescribed to Jason at the same time the sleep hygiene strategies prescribed by the authors were starting, the authors advocated against this medication on the grounds that it had not been researched with children like Jason, and was therefore not evidence-based, and on the grounds that it was incompatible with the sleep hygiene studies because the addictive properties of the medication could increase sleep problems in the future if the medication was withdrawn.

Conclusion

Considering the above discussion and recommendations, the authors also recognize potential limitations. An overarching limitation of the current discussion relates to the fact that all perspectives are from professionals in the field of behavior analysis and are not exhaustive of all perspectives within the field. Additional perspectives from other members serving on an interdisciplinary treatment team would provide viewpoints that may differ and have the potential to enhance current and future practice of mental health treatment teams who are providing interdisciplinary treatment. Future research might investigate the effects of the interactions between the intervention methodologies of interdisciplinary teams on the overall treatment of various types of clients with a variety of presenting concerns. Such research can help clinicians better determine both the compatibility and evidence base of interventions and can determine if the effects of various interventions differ when they are used together, as opposed to when they are used individually. By doing more research to understand the interactions of interventions, and incorporating this information into the decision-making hierarchy outlined above, all treatment professionals can work together and choose the best possible combination of interventions for their clients. Finally, this discussion focused on research evidence and compatibility of interventions, but clinicians must always also consider individual data and response to intervention, as well as client and guardian values, preferences, and other cultural considerations when selecting intervention goals and methodologies.

The research that is available suggests that degree and direction of behavior change can differ depending on whether interventions are used concurrently or individually, but this research is still limited. Despite these limitations, it is important to consider this when making decisions about interventions. It is also important to make sure that all members of a treatment team work together and that they ensure that their interventions work together, not against each other, if the best possible outcomes for clients are to be achieved. Behavior analysts must act to better communicate processes for decision-making to ensure communication across interdisciplinary teams is a standard, not simply a recommendation. In the future, it will also be important to conduct more in-depth explorations of barriers to team communication and collaboration and to further develop and evaluate strategies for overcoming such barriers.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Appendix

Included here is a general set of questions that can be tailored for each client as necessary. This list in not exhaustive, and behavior analysts should take care to individualize for each client.

- How did the client sleep last night?
- How is the client eating, any changes in diet?
- Any changes in activity level?
- Any changes in other treatments or services (e.g., medications, therapeutic services)?
- Has the client shown any symptoms of illness or injury?
- Are there any new behaviors of concern?
- Have any existing target behaviors occurred in situations different than typical?
- Have there been any schedule/routine changes (e.g., toileting, hygiene/cleanliness, school changes)?
- Have there been any changes in living conditions (house rules, roommates)?
- Have there been any unusual stressors (e.g., death in family, parent separation, residential move, staffing/provider changes, probe in more detail based on client history and response)?

References

American Medical Association. (2007). *Code of medical ethics*. Chicago, IL: American Medical Association.

American Psychiatric Association. (2001). *The principles of medical ethics: with annotations especially applicable to psychiatry*. Washington, D.C.: American Psychiatric Association.

American Psychological Association. (2007). *Code of medical ethics*. Chicago, IL: American Medical Association.

Bailey, J. S., & Pyles, D. A. M. (1989). Behavior diagnostics. In E. Cipani (Ed.), *The treatment of severe behavior disorders: behavior analysis approaches* (pp. 85–107). Washington, DC, US: American Association on Mental Retardation.

Behavior Analyst Certification Board. (2014). *Professional and ethical compliance code for behavior analysts*. Littleton, CO: Behavior Analyst Certification Board, ® Inc.

Brodhead, M. (2015). Maintaining professional relationships in an interdisciplinary setting: strategies for navigating nonbehavioral treatment recommendations for individuals with autism. *Behavior Analysis in Practice, 8*, 70–78. doi:10.1007/s40617-015-0042-7.

Crosland, K. A., Zarcone, J. R., Lindauer, S. E., Valdovinos, M. G., Zarcone, T. J., Hellings, J. A., & Schroeder, S. R. (2003). Use of functional analysis methodology in the evaluation of medication effects. *Journal of Autism and Developmental Disorders, 33*(3), 271–279.

Dawson, G., Jones, E. H. J., Merkle, K., Venema, K., Lowy, R., Faja, S., Kamara, D., Murias, M., Greenson, J., Winter, J., Smith, M., Rogers, S. J., & Webb, S. J. (2012). Early behavioral intervention is associated with normalized brain activity in young children with autism. *Journal of the American Academy of Child & Adolescent Psychiatry, 51*(11), 1150–1159.

Dawson, G., Rogers, S., Munson, J., Smith, M., Winter, J., Greenson, J., Donaldson, A., & Varley, J. (2010). Randomized, controlled trial of an intervention for toddlers with autism: the Early Start Denver Model. *Pediatrics, 125*(1), e17–e23.

Eikeseth, S., Smith, T., Jahr, E., & Eldevik, S. (2007). Outcome for children with autism who began intensive behavioral treatment between ages 4 and 7: a comparison controlled study. *Behavior Modification, 31*(3), 264–278.

Fisher, W., Piazza, C., & Page, T. (1989). Assessing independent and interactive effects of behavioral and pharmacological interventions for a client with dual diagnoses. *Journal of Behavior Therapy and Experimental Psychology., 20*(3), 241–250.

Garcia, A. B., Sapyta, J. J., Moore, P. S., Freeman, J. B., Franklin, M. E., March, J. S., & Foa, E. B. (2010). Predictors and moderators of treatment outcome in the Pediatric Obsessive Compulsive Treatment Study (POTS I). *Journal of the American Academy of Child & Adolescent Psychiatry, 49*(10), 1024–1033.

Hoza, B., Pelham, W. E., Sams, S. E., & Carlson, C. (1992). An examination of the dosage effects of both behavior therapy and methylphenidate on the classroom performance of two ADHD children. *Behavior Modification., 16*(2), 164–192.

LaRue, R. H., Northup, J., Baumeister, A. A., Hawkins, M. F., Seale, L., Williams, T., & Ridgway, A. (2008). An evaluation of stimulant medication on the reinforcing effects of play. *Journal of Applied Behavior Analysis, 41*, 143–147.

McPheeters, M. L., Warren, Z., Sathe, N., Bruzek, J. L., Krishnaswami, S., Jerome, R. N., & Veenstra-VanderWeele, J. (2011). A systematic review of medical treatments for children with autism spectrum disorders. *Pediatrics, 127*(5), e1312–e1321.

MTA Cooperative Group. (1999). A 14-month randomized clinical trial of treatment strategies for attention-deficit/hyperactivity disorder. *Archives of General Psychiatry, 56*, 1073–1086.

Murray, D. W., Arnold, L. E., Swanson, J., Wells, K., Burns, K., Jensen, P., Hechtman, L., Paykina, N., Legato, L., & Strauss, T. (2008). A clinical review of outcomes of the Multimodal Treatment Study of Children with Attention-Deficit/Hyperactivity Disorder (MTA). *Current Psychiatry Reports, 10*, 424–431.

O'Neill, R. E., Horner, R. H., Albin, R. W., Sprague, J., Storey, R., Newton, K., & J. S. (1996). *Functional assessment and program development for problem behavior: a practical handbook* (2nd ed.). Pacific Grove, CA: Brooks/Cole.

Northup, J., Fusilier, I., Swanson, V., Roane, H., & Borrero, J. (1997). An evaluation of methylphenidate as a potential establishing operation for some common classroom reinforcers. *Journal of Applied Behavior Analysis, 30*, 615–625.

Piacentini, J., Bennet, S., Compton, S. N., Kendall, P. C., Birmaher, B., Albano, A. M., March, J., Sherrill, J., Sakolsky, D., Ginsburg, G., Rynn, M., Bergman, R. L., Gosch, E., Waslick, B., Iyengar, S., McCracken, J., & Walkup, J. (2014). 24- and 36-week outcomes for the Child/Adolescent Anxiety Multimodal Study (CAMS). *Journal of the American Academy of Child & Adolescent Psychiatry, 53*(3), 297–310.

Schall, C. (2002). A consumer's guide to monitoring psychotropic medication for individuals with autism spectrum disorders. *Focus on autism and other developmental disabilities, 17*(4), 229–235.

TADS Team. (2004). Fluoxetine, cognitive-behavioral therapy, and their combination for adolescents with depression: Treatment for Adolescents with Depression Study (TADS) randomized controlled trial. *Journal of the American Medical Association, 292*(7), 807–820.

Valdovinos, M. G., & Kennedy, C. H. (2004). A behavior-analytic conceptualization of the side effects of psychotropic medications. *The Behavior Analyst, 27*, 231–238.

Valdovinos, M. G., Nelson, S. M., Kuhle, J. L., & Dierks, A. M. (2009). Using analogue functional analysis to measure variations in problem behavior rate and function after psychotropic medication changes: a clinical demonstration. *Journal of Mental Health Research in Intellectual Disabilities, 2*, 279–293.

Vinokur-Kaplan, D. (1995). Enhancing the effectiveness of interdisciplinary mental health treatment teams. *Administration and Policy in Mental Health, 22*(5), 521–530.

Walkup, J. T., Albano, A. M., Piacentini, J., Birmaher, B., Compton, S. N., Sherrill, J. T., Ginsburg, G. S., Rynn, M. A., McCracken, J., Waslick, B., Iyengar, S., March, J. S., & Kendall, P. C. (2008). Cognitive behavioral therapy, sertraline, or a combination in childhood anxiety. *The New England Journal of Medicine, 359*(26), 2753–2766.