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A BEHAVIORAL PRESCRIPTION FOR PROMOTING APPLIED BEHAVIOR ANALYSIS WITHIN PEDIATRICS

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In recent decades, pediatric medicine has undergone a shift in focus from infectious diseases to the effects of behavior on the health and development of children. At the same time, behavior analysts have increasingly evaluated the direct application of their technology to the development and maintenance of child health behavior. Unfortunately, applied behavior analysts have developed their technology parallel to, rather than collaboratively with, pediatricians and, as a result, are not recognized as experts in the treatment of child health behavior. In addition, behavioral technology is not widely recognized as the treatment of choice by pediatricians. This paper provides a behavioral prescription for behavior analysts who wish to enter pediatrics as expert scientists and technicians. Specific recommendations are provided for stimulating collaborative rather than parallel development between applied behavior analysis and pediatrics in the promotion and maintenance of child health behavior. Strategies for maintaining this collaborative relationship and for strengthening the social relevance of behavior analysis are discussed.

DESCRIPTORS: applied behavior analysis, behavioral pediatrics, collaboration, consultation, health care

In recent decades, advances in biomedical science, mass immunization, and sanitation have resulted in a decrease in the incidence of infectious diseases (Matarazzo, 1984). As a result, the major causes of morbidity and mortality have shifted from physiological (internal) pathogens to behavioral and environmental (external) pathogens (Califano, 1979). For example, in studies of primary care pediatrics, only 12% of all patients presented with problems that were purely physical in nature (e.g., Duff, Rowe, & Anderson, 1973). Indeed, most primary care pediatricians are regularly presented with a variety of nonmedical concerns (Glascoe, MacLean, & Stone, 1991), and many of these concern children's behavioral adjustment (Hickson, Altemeier, & O'Connor, 1983; Thomas, Byrne, Offord, & Boyle, 1991). Concerns expressed most frequently by parents have included compliance and elimination, sleep, and feeding problems (e.g., Dias & McKenzie, 1992; Glascoe et al., 1991; Thomas et al., 1991), with 56% of all well-child visits to pediatricians involving issues of child rearing, behavior management, and academic performance (McClelland, Staples, Weisberg, & Berger, 1973). This "new morbidity" (Haggerty, Roghman, & Pless, 1975) indicates that the practice of pediatric medicine has undergone a shift in focus from infectious diseases to the effects of behavior, life-style, and environment on the health and development of children.

At the same time, this new morbidity has caused behavior analysts to evaluate the direct application of their technology to the development and maintenance of child health behavior. Behavior analysts have developed applications for treatment of noncompliance (e.g., Matthews, Friman, Barone, Ross, & Christophersen, 1987; Wahler & Fox, 1980), elimination problems (e.g., Doleys, 1977; O'Brien, Ross, & Christophersen, 1986), sleep disorders (e.g., Piazza & Fisher, 1991), feeding problems (e.g., Greer, Dorow, Williams, McCorkle, & Asnes, 1991), habit disorders (e.g., Blum, Barone, & Friman, 1993; Friman & Hove, 1987; Watson & Allen, 1993), and chronic pain (e.g., Allen & McKeen, 1991), as well as appointment keeping

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(e.g., Friman, Finney, Rapoff, & Christophersen, 1985), primary prevention (e.g., Yokley & Glenwick, 1984), injury prevention (e.g., Barone, Greene, & Lutzker, 1986; Tertinger, Greene, & Lutzker, 1984), and adherence to treatment regimens (e.g., Finney, Friman, Rapoff, & Christophersen, 1985). As applied behavior analysts have become increasingly aware of child health behavior as a socially relevant problem, research devoted to the assessment and treatment of child health behavior has steadily increased. A citation review of the premier journal in the applied behavioral sciences shows that, compared with its first 5 years, the *Journal of Applied Behavior Analysis* has, in the past 5 years, more than tripled the number of articles devoted to the assessment and treatment of child health behavior problems. Yet, the most widely recognized contributions of applied behavior analysis continue to involve the treatment of persons with developmental disabilities (Reed, 1991). Although pediatricians have little time (about 90 s per visit; Reisinger & Bires, 1980) and training (Haggerty, 1979; Task Force on Pediatric Education, 1978) to solve common child health behavior problems, they do not typically refer children with behavioral problems to other professionals (Goldberg, Roghmann, McInerny, & Burke, 1984). Unfortunately, applied behavior analysts have developed their technology parallel to, rather than collaboratively with, pediatricians. As a result, behavior analysts are not recognized as experts in the treatment of child health behavior, nor is behavioral technology widely recognized as a treatment of choice by pediatricians.

We believe the responsibility for the lack of recognition and integration of applied behavior analysis by pediatricians lies with applied behavior analysts. Bailey (1991), for example, noted that "we have not packaged and marketed our product in such a way that it is readily accepted and easily used" (p. 447). Our zeal to be scientific has meant failure to attend to how to sell our technology to the masses. What is missing is the "front-end" analysis with pediatricians to discover what they are looking for and how it should be packaged.

The purpose of this paper, then, is to provide a behavioral prescription that will stimulate collaboration rather than parallel development between applied behavior analysis and pediatrics in the promotion and maintenance of child health behavior. The literature is replete with excellent resources for psychologists describing how to establish a behavioral pediatrics training program, how to select an appropriate consultation model to follow, and how to maintain a relationship with a pediatrician once one has been established (e.g., Christophersen, Cataldo, Russo, & Varni, 1984; Drotar, Benjamin, Chwast, Litt, & Vajner, 1982; Roberts & Lyman, 1990; Roberts & Wright, 1982; Stabler, 1979). Nowhere, however, is there a detailed behavioral prescription that directs the behavior analyst how best to initiate contact and successfully establish a collaborative relationship with a pediatrician. This prescription is applicable for developing collaboration within any pediatric subspecialty (e.g., cardiology, oncology, nephrology, endocrinology, etc.), for which behavior analysts have also been successful in developing technology for managing problems of children with chronic illnesses (e.g., Epstein et al., 1981; Magrab & Papadapoulou, 1977; Rapoff, Purviance, & Lindsley, 1988). However, the focus here will be on establishing relationships within primary care pediatrics. Primary care settings are particularly valuable avenues because they focus on wellness rather than on pathology, and they have large numbers of patients who present with a wide variety of health behavior problems. Ultimately, this means more opportunities to make an immediate impact by solving problems quickly and effectively. That is, behavioral technology can increase the primary care pediatrician's access to reinforcers, wherever they practice (e.g., private practice, inpatient units, or ambulatory care hospital settings). Finally, as applied behavior analysts conducting research and applying behavioral technology within the field of pediatrics, our own collaborative relationships were launched in primary care pediatrics, using the following prescription as a guide.

RECOMMENDATIONS FOR ENTRY INTO PEDIATRICS

Know the Organism and the Environment

It is important to know something about pediatricians, including the ways in which they were trained and the contingencies under which they operate. Psychologists have generally shown little interest in these areas (Friedman, 1985), and the result has been a poor understanding of barriers that exist and an even weaker understanding of proactive steps that may promote integration with pediatrics.

The training. The biomedical model teaches pediatricians to follow disease-centered models to diagnose and treat problems seen in the clinic (Miller & Swartz, 1990). Pediatric residency programs typically do not focus on behavioral aspects of pediatrics and adolescent medicine (Task Force on Pediatric Education, 1978). In addition, pediatric residents focus most of their effort in tertiary care settings in specialty training, with little supervision in the management of common childhood behavior problems (Christophersen, 1991). As a result, pediatricians may localize behavior problems within the child, giving little consideration to learning history (Drotar, 1983). Thus, behavioral interpretations suggesting that a child's behavior is instrumental in controlling the environment rather than expressive of internal events may initially not be well received or well understood.

Note that although a majority of pediatric residents have reported being inadequately trained in behavioral aspects of pediatrics (Haggerty, 1979), primary care pediatricians are taught to assume total responsibility for (McNamara, 1981) and expertise over (Miller & Swartz, 1990) all aspects of patient care. This comes in part from the social status of physicians in the biomedical community, but also because to do otherwise is impractical and undesirable if it results in the fragmentation of services. It is not surprising, then, to encounter pediatricians who may feel compelled to make "behavioral" recommendations despite their limited training to do so.

The contingencies. Pediatrics has traditionally been one of the lowest income subspecialties in medicine, in spite of heavy patient loads, long hours, and extensive on-call responsibilities. Consequently, important reinforcers for pediatricians often lie beyond monetary compensation alone.

First, consider that for the most part, pediatricians see children who get well and stay well. Preventive and well-child medicine has become increasingly powerful, allowing the pediatrician to fix most health problems, sometimes in only one visit. As applied behavior analysts, we have access to powerful behavioral technology that can fix common health behavior problems in a short amount of time. Establishing a collaborative relationship with a behavior analyst can add to the pediatrician's armamentarium of "powerful medicine," making us valuable colleagues.

Second, pediatricians value highly the frequent, regular contact they have with children and families. Pediatricians often maintain relationships with their patients from infancy through adolescence. Not surprisingly, pediatricians are protective of these relationships with families and are unlikely to engage in responses that reduce their proximity to their patients for long periods of time. This can prove to be a serious barrier for professionals who threaten this relationship or provide extended psychotherapy with vaguely defined methods in remote clinics. Behavior analysts, however, invite close scrutiny of their short-term, empirically testable, problem-oriented technology. Collaborating with pediatricians to assist them in providing better management of child health behavior problems should serve to enhance the doctor–family relationship.

Third, access to technology that can be effectively integrated into clinical practice, and at the same time be accountable and cost effective, is of growing import in light of impending health care reform and the emergence of managed care (Mash & Hunsley, 1993). Although primary care pediatricians do not typically generate large revenue (as compared to procedure-based subspecialties), the ability

to generate revenue is still an important motivating variable. In managed care, where the primary goal is reduction of health care costs, payments will be denied for care not thought to be cost effective (Appelbaum, 1993). Behavior analysts are in a good position to meet this standard. In a demonstration of this potential, Finney, Riley, and Cataldo (1991) evaluated a behavioral pediatric consultation service operating within a health maintenance organization. Using brief, protocol-driven behavioral interventions, the behavioral pediatric consultation service not only improved or resolved most problems presented but also reduced the overall use of medical services by the children.

Finally, pediatricians often find considerable value in the research productivity and clinical training available through collaboration with behavior analysts. Our experience suggests, however, that formal research and training opportunities are not likely to arrive until the initial relationship has been established. Thus, the role of research collaboration and behavioral pediatric training in the maintenance of a collaborative relationship will be discussed in more detail below.

The guild. Pediatricians are members of a powerful guild that works to promote high standards of practice and to protect physicians and their interests. Of course, a strong guild is an important component of any organized professional organization, including psychology, and the direct impact of the guild on efforts to gain entry are likely to be small. However, one cannot discount the protective competition engendered by guilds (Maher, 1983). For example, the recent effort by some psychologists to acquire prescription privileges has been of concern to many physicians. Although the battle is often depicted as one between psychology and psychiatry (Kingsbury, 1992), many physicians outside of psychiatry (e.g., family practice and pediatrics) also see this as an ill-advised and undesirable encroachment. The American Medical Association has already passed a formal resolution expressing objection to psychologists obtaining prescription privileges (Deleon, Fox, & Graham, 1991). Obvious efforts by psychologists to assume activities previously reserved for guild members may create an additional barrier for behavior analysts trying to gain entry into pediatrics.

The medical hierarchy. Status within the medical community is often based on vague criteria that include the years of training, the life-threatening nature of a specialty, and the scientific nature of that specialty (Stabler, 1988). Psychology does not have a place in this hierarchy (Nathan, Lubin, Matarazzo, & Persely, 1979), and the status of behavior analysts outside the hierarchy is uncertain because most physicians know little about our education or the scientific nature of what we do (Friedman, 1985). The medical community considers us to be members of the allied health professions along with occupational therapy, physical therapy, nutrition, dietetics, nursing, and so forth, and we may be viewed as quasi-psychiatrists, psychometricians, or research specialists (Nathan et al., 1979) with little clinical expertise in a medical setting.

A logical conclusion drawn from knowledge of pediatricians and their environment is that we need to better educate pediatricians about our science, our extensive training, and our expertise in solving problems that pediatricians encounter daily. After all, better informed pediatricians should make more receptive collaborators and more willing referral sources. However, consider the irritation many of us experience when someone new to our clinic, laboratory, or classroom is more interested in showing us what they know rather than taking the time to learn what we have to teach. Pediatricians are probably no different. Therefore, those interested in educating pediatricians about behavior analysis and gaining entry into the field of pediatrics should consider first learning what pediatricians have to teach.

Assume the Role of Learner

The recommendation to assume the role of a learner is consistent with recent calls for behavior analysts to be more willing to consider alternative views, support diversity, and attend to other disciplines, thus increasing the probability that others will in turn attend to us (Neuringer, 1991). Although there are clearly times when it is appro-

priate, even desirable, for us to be confident and perhaps assertive in emphasizing our own accomplishments (Green, 1991; Hineline, 1991), doing so during initial efforts to gain recognition and acceptance may be counterproductive. If pediatricians see that we care enough to become knowledgeable about their area, it is likely that they will assume that we must also be competent and knowledgeable about our own.

Learning their language. Wading through medical jargon can be an immediate obstacle to learning and communication. A medical dictionary, such as *Dorland's Illustrated Medical Dictionary,* can be useful in becoming familiar with basic medical terminology and abbreviations. This familiarity can both enhance communication in the pediatric clinic and improve the ability to describe assessment and treatment recommendations in terms with which the pediatrician is familiar (Roberts & Lyman, 1990).

Reading their journals. Perhaps one of the best means of learning about current practices in pediatrics is to read pediatric journals (Christophersen et al., 1984). Pediatricians' most prominent journal is *Pediatrics,* but other valuable information about recent developments in pediatrics can be obtained from *Journal of Pediatrics, Clinical Pediatrics, American Journal of Diseases of Children, Journal of Developmental and Behavioral Pediatrics, Pediatrician,* and *Pediatric Clinics of North America.*

Getting involved in pediatric professional organizations. Local chapters of the American Academy of Pediatrics have recently begun to grant memberships to other pediatric specialists (e.g., Nebraska Chapter of the American Academy of Pediatrics, personal communication, July, 1993). Membership can be a valuable credential. But even without membership, important information about advances and controversies in pediatrics can be obtained by attending and presenting at local, regional, and national pediatric conferences. The Society for Pediatric Research, the Society for Behavioral Pediatrics, and the American Academy of Pediatrics have excellent national conferences, and many pediatric hospitals hold regional "Pediatric Update" conferences and meetings on developmental pediatrics.

Enter the Pediatric-Medical Culture

Becoming involved where service is typically provided. Availability can be established through visibility in the nurses' stations, conference rooms, and/or hallways of the pediatric clinic or inpatient unit where we can become a part of the activities (if only as an observer initially) while informal conversations let staff members get to know us (Drotar et al., 1982). It can prove particularly helpful to get to know support staff and to value their knowledge and expertise (Miller & Swartz, 1990). Many pediatricians make referrals based upon recommendations from their support staff (i.e., nurses, physician assistants, nurse practitioners, lab technicians), so familiarity and visibility can be just as important with these professionals as with the pediatrician.

Noting common behavior problems. Physicians and staff often discuss their cases in the clinic, including those cases that involve difficult behavior problems. Paying specific attention to those behavior problems which present the greatest difficulty can be invaluable in determining where the most substantial and immediate contribution can be made.

Attending pediatric grand rounds and conferences. Attending pediatric clinical rounds, grand rounds, and conferences can provide an opportunity to look and be interested, to observe, and to get to know people (Christophersen et al., 1984; Stabler, 1988). Offering behavioral interpretations of current topics or a patient's presenting problem may initially be counterproductive, given pediatricians' medical training. Eventually, however, those who have been visible and have appeared to be interested will undoubtedly be asked to provide an opinion. When this opportunity presents itself, it is best to blend one's analysis rather than inject it (Stabler, 1988). For example, comments that acknowledge portions of the extant analysis that seem appropriate and then expand to offer additional helpful comments may be more readily received.

Delivering behavioral technology. When referrals are first made, it is helpful to see these cases in the pediatric setting whenever possible. Services offered in the pediatric setting allow the pediatrician to maintain a greater sense of proximity and management of care; these are important to the doctor–patient relationship and can help to establish one's value to the pediatrician. Outpatient services offered in the pediatrician's clinic also avoid the stigma associated with attending a psychologist's office or clinic (Wersh, Tritt, Stambrook, & Dushenko, 1982) and can be less costly (Morrison, 1976). In addition, pediatricians (or residents) may ask to sit in and observe during treatment sessions. If they do not ask, perhaps they would be willing if invited. These usually prove to be good opportunities to demonstrate one's skills and the efficacy of behavioral technology.

Give Talks

Volunteering to do presentations. Presentations during grand rounds, clinical rounds, and pediatric conferences provide an excellent opportunity to promote collaborative relationships by speaking to the needs and interests of the audience. For example, presentations that focus on those problems identified through observations in the clinic or on the unit are likely to be of particular interest. Additional topics assured of generating wide interest include common presenting problems, which in primary care settings include management of oppositional behavior, elimination disorders, adherence to treatment regimens, and sleep or feeding problems. A potentially useful strategy is to offer the physician presentations for the staff on office management of challenging children, or presentations to parents on developmental and behavioral aspects of infant and toddler care. Regardless of the particular setting in which the presentation is made, consider offering to make the presentation in collaboration with a medical colleague. Copresenting with a pediatrician in front of parents or even colleagues can enhance his or her image as someone who possesses expertise in total child health management. As a result, one's status as a valuable colleague can be established or enhanced. Likewise, in medical schools, grand-round presentations may be done jointly with faculty or residents who are required to present or have special interests in behavioral components of pediatric health care. Joint presentations display an attitude of cooperation and respect and set the occasion for positive interactions in which we may have the opportunity to influence the behavioral education of pediatricians.

Keeping it simple. Behavioral jargon may confuse the audience, and words that are traditionally associated with behavioral technology are often laden with pejorative connotations. Descriptions of the application of behavioral technology with children are viewed as more acceptable when nontechnical terms are used (e.g., Witt, Moe, Gutkin, & Andrews, 1984; Woolfolk & Woolfolk, 1979). Language that highlights the fact that our methods encourage independence, self-confidence, individual responsibility, and self-esteem, while cultivating a sense of freedom and respect for others (Bailey, 1991), is likely to be more appealing.

Adopting a position that the pediatrician can apply our technology. During a presentation, suggestions that behavioral technology is something only behavior analysts can do may violate the underlying medical hierarchy, challenge the guild, and limit the pediatrician's access to powerful medicine. Many pediatricians may stop listening at this point. Of course, there are many complicated behavioral disorders that pediatricians cannot or would not want to attempt to manage independently. And most pediatricians are interested in learning more about when to refer. But initial entry can be facilitated by taking the position that practicing pediatricians can successfully apply behavioral technology to many of the common health behavior problems they encounter. Providing simple protocols is one way to assist them in doing so (Christophersen & Rapoff, 1980). Protocols can also help pediatricians identify when to make an appropriate referral. For example, protocols may suggest seeking consultation from a behavioral psychologist (provide a name and number) if the parents (instead of the pediatrician) are having a hard time implementing the prescribed treatment (i.e., the problem isn't getting solved). Providing protocols can also

create an opportunity for self-promotion in the context of predicting the pediatrician's success. That is, we can predict the pediatrician's success based upon our own repeated success with just such cases—a tactic that permits a confident appraisal of one's own accomplishments while identifying oneself as a potential referral source.

Publish

When attempting to gain entry to the pediatric setting, it is valuable to have published articles on topics of interest to pediatricians, and even more valuable to have published in pediatric journals. In addition to the prominent pediatric journals discussed previously, publications in other pediatric psychology (e.g., *Journal of Pediatric Psychology*) or behavioral (e.g., *Journal of Applied Behavior Analysis*) journals can help to demonstrate scientific expertise and create additional exposure for behavioral literature. When cases related to one's published research arise, an opportunity is then available to refer to these studies and send a reprint to the relevant pediatricians. Publishing in pediatric journals can help to demonstrate that behavior analysts are (a) empirically based, (b) interested in problems that are relevant to pediatrics, and (c) productive scientists, and possibly professionals with whom to collaborate on future research.

Communicate with Referring Pediatricians

Once pediatricians have made a referral, they are accustomed to receiving prompt feedback about the status of every referral they have made (Meyer, Fink, & Carey, 1988). The importance of the pediatrician's relationship with the patient and family can be acknowledged by providing prompt feedback in the form of brief written notes. We suggest referring to the patient as "your" patient, and avoiding singular self-references when discussing how the case will be handled. References to how "we" will deal with a particular problem can create a continuing sense of collaboration while the pediatrician maintains primary management of care. In addition, frequent communications involving progress reports, requests for assistance in interpreting test results, or clarification of medical issues can help to strengthen the pediatrician's impression of a colleague who is thorough and competent.

PROMOTING BEHAVIOR ANALYSIS IN THE FUTURE

Following this prescription may not only help to establish a collaborative relationship with pediatric medicine but also help to maintain that relationship. In addition, other opportunities to strengthen the integration of behavior analysis will present themselves. Few academic pediatricians, for example, have the training, time, or resources necessary to maintain the level of productivity needed to gain many academic reinforcers. Reinforcers typically derived from completing clinical research may be too remote to be useful in promoting entry into pediatrics. But research expertise can prove valuable in the maintenance of a collaborative relationship once one has been established. In addition, collaborative research efforts afford the behavior analyst the opportunity to discuss and promote the use of single-subject research methodology in the medical community. On a practical level, single-subject research designs can be attractive to physicians because (a) some medical conditions are so rare that large group studies are not possible, (b) experimental rigor can be achieved while avoiding problems associated with securing no-treatment control groups, and (c) pharmaceutical companies may like pilot investigations that show effects before large group studies are initiated (Allen, Friman, & Sanger, 1992). For example, an important area for collaborative research might include studies of how best to improve adherence to health-related regimens. Not surprisingly, behavioral strategies have been the most effective of those tested to date (Rapoff & Barnard, 1991). However, ensuring adherence to a medical treatment regimen continues to present significant management problems, particularly in cases in which the immediate negative health consequences are small and the health benefits are remote (e.g., promoting dietary and/or exercise changes for treatment of hypertension, hyperlipidemia, or obesity). There continue to be sub-

stantial research opportunities in these areas for behavior analysts collaborating with pediatricians.

Program-oriented collaboration, in which new clinical services are developed to maximize collaboration between pediatric medicine and behavior analysis, may also occur (Drotar, 1993). For example, problem-focused clinics (e.g., enuresis, pain, attention deficit hyperactivity disorder, or weight management clinics) may prove to be more cost effective for meeting the needs of large numbers of patients. In addition, behavior analysts who have successfully promoted themselves and their technology may be asked to provide behavioral-developmental pediatric training for pediatricians. Accredited pediatric residency training programs now require training in behavioral-developmental pediatrics (Residency Review Committee for Pediatrics, 1992), and behavior analysts are in an excellent position to offer requisite clinical and didactic experiences in normal and abnormal child behavior. Residents who complete rotations with behavior analysts or private practitioners who complete minifellowships with behavior analysts (Christophersen & Rapoff, 1980) may then become productive advocates of a partnership between applied behavior analysis and pediatric medicine.

Adherence to these prescribed recommendations should provide access to exciting clinical and research possibilities for which our technology is well suited. But it is clear that the effects of these recommendations go well beyond the success of simply promoting behavior analysis to individual pediatricians. Success in pediatrics may result in the promotion of behavior analysis within medicine in general. For example, studies using single-subject methodology with references to prominent behavioral research have begun to be published in some of the most respected journals in the medical community (e.g., Guyatt et al., 1986; McLeod, Cohen, Taylor, & Cullen, 1986). But beyond that, Baer (1986) has suggested that the collaboration between our discipline and medicine may provide a "piggy-back mechanism of social adoption" (p. 67) for applied behavior analysis. Moreover, each individual's ability to establish positive judgments of our technology may "bring the consumer, that is society, into our science, soften our image, and make more sure our pursuit of social relevance" (Wolf, 1978, p. 207). Thus, following the behavioral prescription provided here may not only help to promote the acceptance of individual behavior analysts into a collaborative relationship with pediatricians, but also may promote the dissemination of behavioral technology and the acceptance of applied behavior analysis into other medical specialties and the community as a whole.

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