COMPASS:
A Parent–Teacher Collaborative Model for Students with Autism

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Educational and psychological consultants have a long history of providing indirect school-based service delivery to students with disabilities. The need for consultants with skills in autism is necessary now more than ever. Described as one of the most complex developmental disabilities, autism is being identified in children at a rapid rate—more so than any other low-incidence disability, resulting in the need for trained personnel. To enhance competence of both the student and the teacher, a holistic understanding of the interactions between students and their environments is necessary. A consultation framework with strong theoretical and conceptual support is described. The rationale for a specific consultation approach in autism is presented and components of the consultation model provided. Educational and psychological consultants are ideally positioned to act as bridges between parents and school personnel for developing appropriate programs based on parent–teacher collaboration.

Autism is recognized as among the most complex of lifelong neurodevelopmental disabilities (Allen & Rapin, 1990; Ruble & Stone, in press). Although it was first described by Leo Kanner in 1943, autism was not recognized by the U.S. Department of Education (USDOE) as a handicapping condition until 1991. Since that time, the USDOE (1999) has reported more children being identified with autism than with any other low-incidence disability, and numbers rose 173% from 1992 to 1998. This increased reporting rate of autism substantiates current information that autism spectrum disorders are not rare (National Institutes of Health, 1995). Approximately 1 out of every 1,000 children is affected, making autism the third most common developmental disability. Milder forms of autism—Asperger's disorder and pervasive developmental disorder not otherwise specified—occur at a rate 4 to 5 times higher than classic autism (Bryson & Smith, 1998).

Often described as a spectrum disorder (Rapin, 1991), autism ranges from severe to mild and involves cognitive, sensory, social, communicative, and motor development. Further complicating these features are other co-existing conditions, the most common being mental retardation, in about 65% to 85% of cases (Gillberg, 1990). Other comorbid disorders include neurofibromatosis, tuberous sclerosis, seizure disorder, blindness, deafness, and syndromes such as fragile X, Down, deLange, and Tourette's (Gillberg & Coleman, 1992). About 50% of children with autism are nonverbal or minimally verbal, and about 25% to 30% develop seizures by adulthood (Minshew & Rattan, 1992).

Because of the heterogeneity in autism, a diagnosis does not dictate a specific treatment; rather, each child requires an individualized approach to intervention (Ruble & Sears, 2000). Successful interventions can be developed when parents and teachers work as a coordinated and collaborative team (Ruble & Dalrymple, 1996). At present, however, there is a dearth of school personnel trained to develop such collaborative and specialized programs for students with autism (Dunlap, Robbins, Morelli, & Dollman, 1988; National Research Council, 2001). This is a significant concern because, although students with autism are currently underidentified, more and more children (especially young children) are expected to be reported, due to better diagnostic services. Increased identification has direct consequences for school personnel, the foremost being the need for professionals with the specialized skill and knowledge to develop collaborative and individualized educational programs. It is unrealistic to expect all classroom teachers to be autism experts; a more practical approach is to train educational and psychological consultants as intervention agents to meet the growing needs of specialized personnel in autism.

School consultation, as an indirect form of service delivery, has been a growing element of professional service for children with disabilities (Gutkin, 1996; Reschly, 1993). Although consultation models are abundant (Babcock & Pryzwansky, 1983; Bramlett & Murphy, 1998; Truesdell & Lopez, 1995; West & Idol, 1987), one particular approach has become notable. The consultation framework, which includes parents and teachers, not only has advantages over other approaches but also has been reported to be the most effective approach (Sheridan & Kratochwill, 1992; Sheridan & Steck, 1995). Researchers have docu-

mented teachers' and parents' preference for working together (Bramlett & Murphy, 1998; Freer & Watson, 1999; Sheridan & Steck, 1995). Issues of generalization and maintenance of skills (Sheridan & Steck, 1995; Stokes & Baer, 1977; Wahler & Fox, 1981) are minimized in treatment plans that develop from a collaborative consultation model, as this approach is more likely to result in more consistent programming. In addition, collaboration reinforces the intent of IDEA by providing opportunities for parents and school personnel to work together (Freer & Watson, 1999; U.S. Department of Education, 1997). The provision of coordinated and comprehensive student support services helps ensure that more students with learning and behavioral problems are successfully included in the least restrictive environment (Gutkin, 1996). This issue is critical for students with autism, as most are currently served outside the general education system for most of the day (U.S. Department of Education, 1999). Sheridan and Steck (1995) maintained that a holistic assessment of the student is necessary, as the student is a part of interdependent subsystems that include the family, the school, state agencies (e.g., mental health agency, developmental disability agency), and the larger community system. Finally, Dunlap (1999) reminded researchers that in the present climate of intrusive intervention programs for young children with autism, collaboration with families is needed more than ever in order to increase families' abilities to make choices, obtain a sense of empowerment, and identify feasible program options.

In the present article a consultation model with strong theoretical and conceptual support is presented, called the Collaborative Model for Promoting Competence and Success (COMPASS). The overall goal of COMPASS is to provide indirect intervention to help students with autism achieve competence. The model is based on a transactional framework (Sameroff & Fiese, 1989), which highlights the reciprocal and dynamic interactions between individuals and their environments. It is also a multicomponent competency-enhancement approach adapted from August, Anderson, and Bloomquist's (1992) prevention model. Competence is assumed to operate as a protective factor that buffers the child against circumstances that contribute to failure. Because this framework assumes that the development of competence results from the transaction between the person and the environment, the degree to which pathology is viewed as existing solely within the individual is reduced and the contribution of the environment is emphasized. The framework ascertains current personal and environmental challenges (risk factors) and supports (protective factors; see Figure 1). Risk factors inhibit the development of competence; protective factors encourage competence (August et al., 1992). Competence results when challenges are minimized by maintaining a balance in favor of supports.

COMPASS was also designed to promote (a) collaboration between school personnel and parents or caregivers in the generation of interventions, (b) linkage between assessment information and program plans, (c) prevention of problem behaviors by placing emphasis on functional skills development (Dalyrmple & Ruble, 1995; Ruble & Dalrymple, 1996; Ruble & Sears, 2000; Sears, Dalrymple, & Porco, 1993), and (d) the practice that *after* IEP objectives are developed, *then* teaching strategies are identified. COMPASS aims to enhance the competence of not only the student with autism but also the person working with the student by empowering participants through a collaborative problem-solving process that builds on comprehensive, ongoing assessments before decisions are reached. The process gathers together information by both formal and informal means and from input from those who know the individual, in order to reach a consensus for building successful individualized programs.

Because so many consultation models exist, why would an autism-specific framework be necessary? We offer several explanations. First, although general areas of need are common for students with autism (e.g., supports for organization, communication, and social interaction; Dalrymple, 1995; Koegel, Koegel, & Carter, 1999; Schopler, Mesibov, & Hearsey, 1995), a diagnosis does not delineate specific IEP objectives, teaching strategies, or classroom placements. Indeed, after a student is identified with autism, it is necessary to conduct further functional assessments for program planning in order to provide a comprehensive picture of the individual's strengths and

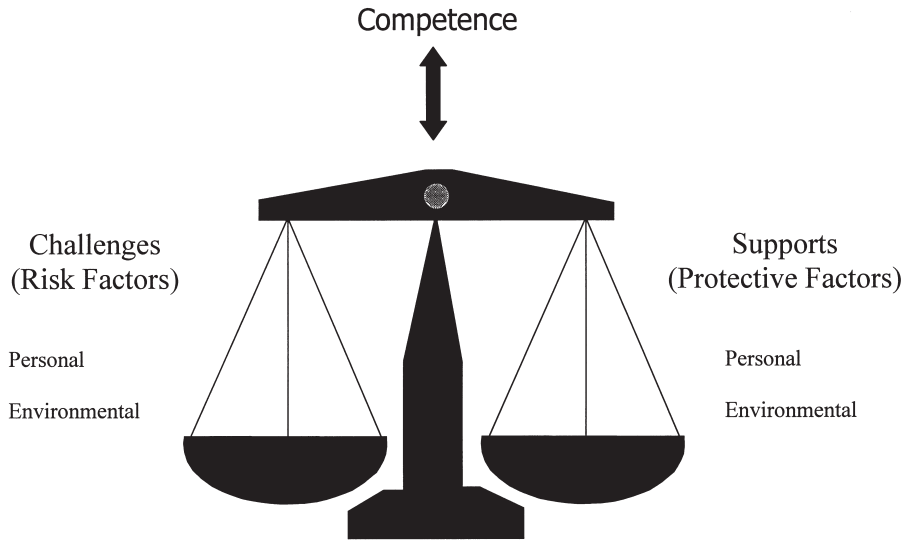

FIGURE 1. Balance between challenges and supports.

weaknesses (Ruble & Sears, 2000; Shriver, Allen, & Mathews, 1999).

Second, although students with autism present with a broad spectrum of cognitive abilities and skills (Bristol et al., 1996) and require individualized teaching strategies and curricula (Olley, 1999), *consistency* in teaching strategies is critical (Koegel et al., 1999). It is not unusual for parents, teachers, and therapists to use different approaches and set different teaching priorities. A consensus among IEP team members, which is reached through communication about the student and is based on a solid assessment, is essential.

Third, autism is a lifelong disability, and achieving changes in behavior may require relatively long periods of time. Like developmental consultation (Bergan, 1977), COMPASS consultation emphasizes the attainment of long-range skills via the achievement of short-term goals. A consultation approach with a short-term goal of solving an immediate problem or answering a specific question may not be as effective as one with the longer term goal of preventing problems and improving consultees' skills in problem solving (Bramlett & Murphy, 1998; Cleven & Gutkin, 1988; Gutkin, 1996). In addition, a developmental approach to consultation emphasizes the interactions between the child and his or her environment, thereby acknowledging the need for repeated applications to identify future goals as present goals are obtained (Bergan, 1977). Thus, an ongoing and systematic consultation framework is likely better and more socially valid for students who have lifelong, complex disabilities like autism.

Fourth, COMPASS consultation takes into account the concept of *social validity,* which is the educational or clinical relevance of the treatment goals, intervention procedures, and evaluation methods. Gresham and Lopez (1996) characterized social validity as "the assessment of the social significance of goals of intervention procedures, the social acceptability of interventions to attain those goals, and the evaluation of the social importance of the effects produced by those intervention procedures" (p. 204). The social significance of behavior is determined by the consumers of the intervention (i.e., parents, teachers, and students); for example, for one student with autism, the goal of learning to work independently until a task is finished might be more important than learning to stay in her seat for a specified period of time. Furthermore, with knowledge, acceptability of a particular intervention may increase. A teacher who has little knowledge about, or experience with, visual schedules for students with autism, for example, may be less likely to implement such an intervention. In such a case, the consultant would need to implement a plan of action to gain teacher acceptance.

Finally, the social importance of the effects of the intervention demonstrates the clinical and practical importance of the behavior change (Gresham & Lopez, 1996). Practical significance can be measured not only by the degree to which behavior changed, but also by how much consumers felt that the consultation produced socially important changes in behavior. For example, a consultation that resulted in recommendations to teach a student with autism to request a break when frustrated, rather than tearing up work materials, would be viewed as socially important by consumers. Thus, social validity is necessary for meaningful consultation outcomes, especially in autism.

Overview of COMPASS

Identification of the challenges to learning (risk factors) and the supports necessary for success (protective factors), as illustrated in Figure 1, is accomplished in four steps. Step 1 involves the identification of personal and environmental challenges. The *personal* challenges for a student with autism are those core impairments related to the student's biological development (in this case, the diagnosis of autism and other possible neurodevelopmental problems that have been identified in previous assessments). Table 1 shows an example of some core impairments and the form that is used to elicit information from team members. The personal risk factors for each student are individually determined via team consensus and by utilizing information from previous assessments. *Environmental* challenges are those external factors that impede the development of learning and, thus, competence. Examples of these fac-

TABLE 1
Example of Personal Challenges

Social interaction: Qualitative impairments in . . .
__ Engaging in back-and-forth social interactions with peers
__ Responding to social cues
__ Understanding how someone else might feel
__ Imitating others
__ Understanding other people's boundaries

Communication: Qualitative impairments in . . .
__ Responding to name
__ Understanding gestures
__ Using gestures to communicate (e.g., pointing)
__ Understanding pronouns
__ Using words in sentences in correct order
__ Responding to directions

Restricted, repetitive, and stereotypical patterns of behavior, interests, and activities:
__ Lining up and/or ordering objects in a sequence
__ Discussing interests in detail regardless of listener's interests
__ Preoccupied with parts of objects
__ Engaging in repetitive body movements (swinging, rocking, pacing, spinning)
__ Insisting on routines, resisting change
__ Managing unstructured time

tors include confusing, noisy, or cluttered environments; no communication supports; little access to sociable peers; and a lack of knowledge or skill in those working with the student with autism (see Table 2; Dalrymple, 1995). Identifying the risks is the first step in the design and implementation of supports.

Step 2 involves the identification of supports (see the right side of the scale in Figure 1), which are the accumulation of both personal and environmental resources. Personal supports are the student's likes, preferences, and strengths (e.g., nonverbal problem solving). Most research in autism has focused on weaknesses within the student. Acknowledgment of strengths can moderate the effects of challenges and can be used as a motivator for learning (Happe, 1999). Environmental supports are the educational modifications and adaptations needed for success; these are based on a broad understanding of a particular student's needs and how he or she learns. Research has shown that the use of environmental supports, such as structured teaching strategies or visually aided supports, increases a student's ability to work independently (McClannahan & Krantz, 1999; Schopler et al., 1995), make requests, and make choices (Bondy & Frost, 1994). Table 3 contains an example of environmental supports.

Step 3, following the assessment of the personal and environmental challenges, is to identify and prioritize teaching goals based on team consensus. Step 4 entails completing the action plan after those goals have been identified. Table 4 provides an example of a COMPASS action plan for a preschool-age child; Table 5 is an action plan that was generated for an elementary student who was included in the general education classroom. Her general education teacher was concerned about off-task behaviors in the classroom, and the principal was concerned about safety at recess. Therefore, a plan for increasing self-management skills was developed with team consensus. After completion of the action plan, it is necessary to identify ongoing assessment strategies and to assign personnel responsible for goal implementation.

TABLE 2
Example of Environmental Challenges

Behavior/knowledge/attitude of other people variables:
__ Are the person's communicative attempts understood?
__ Is the communication of others made clear to the person?
__ Is there a lack of adequate or accurate information provided to the person?
__ Is the person provided a way to communicate to everyone?
__ Is the person taught the necessary social skills for the activities?
__ Is the person taught a way to refuse?
__ Is the person's refusal acknowledged or understood by others?
__ Is the person experiencing an internal state of feelings that is recognized by others?
__tired __hungry __sick __wet or soiled __sensory processing __other

Sensory input from and predictability of the environment:
__ Are the environments too crowded for the person?
__ Are the environments too noisy for the person?
__ Is the person surrounded by too much movement?
__ Are changes explained concretely, visually, or in a manner understood by the person?
__ people changes __ environmental changes __other
__ Is the order of events/activities explained to the person?

Timing and pacing of the environment:
__ Is time or order of events explained concretely, visually, or in a manner understood by the person?
__ schedule changes __time schedules __other
__ Is the person able to sit through small-group activities?

TABLE 3
Example of Environmental Supports: IEP Modifications and Adaptations

Communicating to the person (receptive language supports)
__Slow down the pace
__State positively what to do (e.g., "Let's walk" instead of "Stop running")
__Provide more information in visual format

Encouraging communication from the person (expressive language supports)
__Pause, listen, and wait
__Encourage input and choice when possible
__Provide alternative means, such as written words or pictures, to aid communication
__Encourage and respond to words and appropriate attempts, rather than to behavior

Social supports
__Build in time to watch, encourage watching and proximity
__Practice on specific skills through natural activities with one peer
__Structure activities with set interaction patterns and roles
__Provide cooperative learning activities with facilitation
__Facilitate recruitment of sociable peers to be buddies and advocates
__Provide opportunity for shared experiences using interests and strengths

Expanding repertoires of interests and activities
__Capitalize on strengths and individual learning styles
__Over time, minimize specific fears and frustrations
__Use rehearsal with visuals

Note. IEP = Individualized Education Program.

Increasing the team's awareness of the relationship and tentative balance between challenges and supports is emphasized throughout the consultation. For example, the consultant reminds the team that the task of learning creates major stresses and anxieties for the child when the personal challenges are combined with the environmental challenges. The person with autism is competent when

TABLE 4
COMPASS Action Plan

Goal	Personal challenges	Environmental challenges	Personal supports	Environmental supports
Increase social skills. Objective: During daily play time, Bob will play within a foot of at least one peer for 5 minutes, for 4 out of 5 days.	• Needs personal space • Does not like being crowded and touched • Possessive of his things	• Lack of structure to know where he needs to be in relationship to others • Lack of peer training	• Likes putting objects into containers and spaces • Likes lining things up • Likes verbal praise	• Provide peer training • Facilitate peer activity incorporating interest (e.g., a game of dropping colored balls into matching containers) • Use visual schedule showing time alone • Use visual schedule of daily activities • Reinforce with verbal praise
Increase classroom group behavior skills. Objective: During group circle time (5–20 children), Bob will sit and look for 10 minutes, for 4 out of 5 days.	• Difficulty understanding verbal communication • Difficulty with motor planning • Difficulty understanding passage of time	• High verbal demands • Minimal visual supports • Minimal spatial and time supports	• Likes music • Likes movement • Visual learner	• Provide hands-on activities (e.g., instruments for participation in music) • Provide means to communicate choices of participatory objects during group activities • Encourage partial participation • Reward for participation • Provide visual timer • Provide supportive chair with sides
Increase community leisure skills. Objective: Bob will participate for 10 minutes in eating a meal at a fast food restaurant with a small group at least once a week.	• Has difficulty waiting • Does not understand time frames • Has limited food repertoire	• Noisy environment • Crowded environment • Long waits	• Likes pizza and chicken nuggets • Likes to look around • Likes to be in the community	• Use sensory toys as a waiting strategy after eating • Provide means to choose his meal using a picture menu • Desensitize to one restaurant at a time • Identify best time to go to restaurant, then plan for desensitization to crowd and noise
Increase choice-making. Objective: Given a choice of 1 to 3 items, Bob will indicate a request by pointing, taking, or giving, for 4 out of 5 trials.	• Minimally verbal • Low initiation skills	• Not being allowed to refuse • Use of many verbal cues • Use of minimal visual objects/cues • Lack of motivating objects/activities	• Desires to communicate • Likes certain toys	• Conduct assessment of preferred toys/objects/activities • Develop object/picture choiceboard • Teach 1:1, then generalize to small group • Teach functional means to communicate: —Push-away gesture for refusal —Object/pictures of food and activities for requests

the supports counterbalance the challenges. The role of the team, then, is to understand how to identify, develop, implement, and monitor supports. As with all students, the supports or individualized instructional strategies need to be adjusted over time as the student develops and as environments change.

An effective consultant has specific content knowledge and process skills (Gutkin, 1996; Sheridan, Salmon, Kratochwill, & Carrington Rotto, 1992). Content information pertains to the educational and psychological base of knowledge being shared (Gutkin, 1996), and in this case is knowledge about autism. A list of some competencies for a COMPASS consultant is provided in Table 6. *Process skills* refers to procedural knowledge of consultation (Sheridan et al., 1992), that is, the ability to carry out the problem-solving steps necessary to meet the goals of the consultation. These skills are employed throughout the consultation. Examples of essential process skills described by Bramlett and Murphy (1998) include competency in core areas such as (a) social and communication skills (active listening, paraphrasing, summarizing, and reflecting feelings);

TABLE 5
COMPASS Action Plan

Long-term goal: Increase self-management skills				
Goal	**Personal challenges**	**Environmental challenges**	**Personal supports**	**Environmental supports**

Given the opportunity to transition 6 times a day, Mary will move independently to the next activity by following a picture/word schedule for 5 consecutive days.	• Difficulty following multiple-step commands
	• Difficulty processing auditory information
	• Difficulty stopping an activity
		• Lack of visual supports
		• Noisy environment
			• Imitates peers
			• Learns by observing
			• Has a preference for visual input
				• Provide visual supports to indicate
				  • Schedule for the day
				  • Steps in each activity
				  • Completion of the activity
				  • Time to move
				• Train some peers on how to use a schedule
				• Use peers to model appropriate behavior during transitions

Given the rule for staying in bounds at recess, Mary will follow the rule for 10 consecutive days.	• Same as above • Lack of experience with specific playground rules	• Lack of clear boundaries • Limited opportunities to practice skills of staying in bounds	• Same as above • Good memory for skills that have been rehearsed	• Provide teaching and practice every day for 2 weeks; monitor progress • Use flags to show boundaries of playground • Use peers to model staying in bounds • Reinforce staying in bounds on an intermittent basis

During individual work time, Mary will learn to work quietly for 5 minutes	• Doesn't understand concept of "quiet"
	• Has difficulty keeping rule in mind when working
	• Bothered by noisy environments
	• Doesn't understand others' perspectives
	• Doesn't understand the passage of time
		• Noisy environment
		• Negative reactions directed toward Mary when she makes noises
		• Expectations are beyond Mary's understanding
			• Good imitation skills
			• Has ability to do the academic work
			• Has the desire to do what other students are doing
				• Teach the concept of "quiet" for particular settings
				  • Have peers model "quiet"
				  • Use comic strip conversations for teaching perspective taking
				  • Have a visual reminder to be quiet
				  • Videotape Mary working quietly and noisily, show her the difference, and discuss impact on others
				  • Use social story for working quietly
				  • Begin self-monitoring strategies with visuals, timer, charts, etc.
				  • Reward for working quietly

(b) knowledge and application of systematic problem solving; and (c) self-reflection and self-evaluation. Competency in these areas is necessary in order to effectively build bridges between home and school environments, to help participants find common goals, and to empower participants to answer their own questions.

In conclusion, autism is a complex developmental disability in terms of diagnostic assessment and appropriate program planning. Evidence suggests that a growing number of students with autism will continue to be identified and served by public schools, resulting in a need for trained school personnel who can provide a holistic, family-centered, and collaborative means to work effectively with parents in developing individualized educational plans. School-based consultation is one type of indirect intervention that can help meet the increasingly complex educational demands of students with autism.

After a student is identified, decisions regarding individualized goals, teaching strategies, and classroom placements must be made based on solid assessments and collaborative team planning. Schools without a process to systematically make these decisions may find themselves in costly litigation or being asked to pay for expensive treatment programs (Feinberg & Beyer, 1998; Yell & Drasgrow, 2000). The process and procedures to make such important program decisions require a team of individuals knowledgeable about autism and a systematic problem-solving approach to program planning. Educational and psychological consultants are in an ideal position to serve such roles.

Ruble and Dalrymple (1996) contended that competence is a socially valid consultation outcome. A predictor of academic performance in other children is academic engaged time (Fredrick, Wal-

TABLE 6
Some Suggested Competencies for Consultants Who Use the COMPASS Model

Content skills:

A. Knowledge of systems and laws, such as:
- ➢ Individual program plans as they apply to education, early intervention, or adults
- ➢ Current best practices for the age of the individual
- ➢ Responsibilities of various agencies under the current laws
- ➢ Rights of individuals under the current laws
- ➢ Structure of service delivery system and involved disciplines
- ➢ Available local and state resources

B. Knowledge of family needs, such as:
- ➢ Perceiving parents and family members as partners
- ➢ Rights and desires of confidentiality
- ➢ Respect for stressors within family

C. Knowledge of autism spectrum disorders, such as:
- ➢ Characteristics of autism and how these affect the individual
- ➢ Current best practices information about intervention
- ➢ Assessment procedures and instruments, and how results translate into intervention
- ➢ Strategies for intervention, with core deficits of autism individually identified
- ➢ Use of individual strengths and interests to enhance the program

D. Knowledge of positive behavior management, such as:
- ➢ Functional analysis of behavior
- ➢ Identification of learning skills to replace function of problem behavior
- ➢ Relationship of environment to behavior
- ➢ Data-keeping and analysis of data for decision making

Process skills:

Strong group leadership interaction abilities, such as:
- ➢ Explain purpose and outline agenda
- ➢ Clarify questions and concerns
- ➢ Keep the group moving and focused
- ➢ Involve all participants
- ➢ Value all participants' input
- ➢ Steer dominant members to listen
- ➢ Question members effectively to draw ideas from group
- ➢ Be flexible enough to include unexpected information
- ➢ Summarize as group moves along
- ➢ Conclude with a plan for further action

berg, & Rasher, 1979; Thurlow, Ysseldyke, Graden, & Algozzine, 1984). It is likely that children with autism who attend more to the instructional context will benefit more from their educational programs as well. No research, however, has examined this issue in autism. Outcome is assumed to be dynamic and subject to change, especially as a result of transactions between the child and environment. Research on the effectiveness of consultation in achieving meaningful and socially valid outcomes is needed.

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AUTHORS' NOTE

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