

Self-report of Language Abilities: A Performance Improvement Initiative

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Abstract

Background: Language plays a critical role in human interactions and adequate communication is essential for successful outcomes for the individuals served by human service professionals. Yet little attention is given to evaluation of communication and language deficits in typical health and mental health settings or in the training of professionals working in those programs.

Objective: To describe the prevalence of self-reported communication deficits in two adolescent clinical populations and the implications for diagnosis, formulation, and treatment planning; to share a preliminary effort for quality improvement in identifying youth with communication deficits

Methods: A questionnaire was given to youth ages 11 through 18 years, served in an inpatient unit or a therapeutic day school, in a forced-choice format about the extent to which they have trouble with: understanding what teachers, parents, or peers say; what they read; and with saying or writing what they think. The extent of anger experienced when unable to communicate effectively, and whether help had been received or wanted in specified areas were determined.

Results: Two hundred youth completed the forms. Simple frequency counts are presented for each type of perceived deficit, degree of reported frustration with the deficit, and desired services by the youth. Significant deficits in communication skills were noted that exceeded expected frequencies. Significant correlations are presented for reported self-perceived deficits, frustration, and need for help. Differences in prevalence between the two services are noted but not significant. The scale has high internal consistency and is easy to administer.

Conclusions: Many youth in restrictive clinical settings report substantial communication deficits. Few had been identified previously. Youth are aware and can report such deficits. Youth in clinical settings should be routinely screened and formally assessed as indicated for communication deficits. The scale appears to be psychometrically sound and may provide a quick and reliable screen for language/communication disorders.

Keywords: Mental health; Psychiatry; Biopsychosocial; Psychiatric care; Dyslexia

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Introduction

The ability to communicate has been essential to the functioning and development of civilization, medicine and psychiatry. This paper is presented from the perspective of medicine and psychiatry but the issues are germane to professionals across the breath of human services and the sciences. Physicians rely on communication and language to develop a therapeutic relationship and diagnose, treat, coordinate, and collaborate in

treatment and monitor change. Psychiatrists compared to other medical specialties more critically depend on communication in our biopsychosocial evaluation, diagnosis, and planned interventions. Yet inadequate attention is given to how much we are understood or reliably understand in the interchange with patients and their caregivers. This critical dimension is woefully lacking in training health care professionals about deficits in language and the other disorders in the group currently classified as Communication Disorders (CDs) [1]. Likewise, inadequate

importance and attention has been given by clinicians and academicians to the role CDs play in the development of psychopathology that begins in childhood and can extend throughout the life of an individual with communication deficits. Little or no mention has been paid to language and other CDs in global psychiatric epidemiologic studies that have been published [2,3].

Prognosis for individuals diagnosed with communication disorders is generally considered poor [4-7]. However this is perhaps less true with early or personalized intervention [8]. A considerable literature documents the association between language difficulties and psychiatric illness [5,9-14]. Given the central role of communication across most human interactions and learning, youth with CDs to manifest high levels of comorbid psychiatric disorders, especially those diagnosed with ADHD. Communication deficits represent persistent difficulties in acquiring and using language across modalities, including receptive language (i.e., impaired ability to comprehend what is heard sometimes listed as problems in listening comprehension and associated or often labeled as auditory processing problems in interpreting the spoken or written word), expressive language (i.e., deficits in oral or written expression) or pragmatic skills (i.e., in the application of language in learning or social situations to express emotion or problem solve) [1].

By 2008-2009, over 1 in 5 children were reported by the National Health Interview Survey to have communication problem that limited their usual activity and was considered by parents to be the most debilitating of all chronic pediatric medical conditions [15]. The Federal Center for Disease Control (CDC) [12] reports from parent surveys that speech and language disorders (S&LDs) present in psychiatric disorders that demand psychiatric care [10]. The Diagnostic and Statistical Manual-5 (DSM-5) categorizes CDs to include Language Disorder (LD) and the newly defined Social (Pragmatic) Communication Disorder (SCD), as well as Speech Sound Disorder (sound articulation) and Stuttering [1].

Systematic assessment for CDs indicate their presence in more than half of youth in a typical outpatient psychiatric setting [16]. Cohen and associates note that CDs are infrequently inquired about, screened for, or diagnosed in such settings [16-18]. Thus they are rarely considered in case formulations or in recommendations upon discharge. We note their infrequent consideration across pediatric psychiatric settings. Such CD comorbid related diagnoses as anxiety, depression, ADHD, learning disabilities and autism have long been known [9,10]. Thus elevated prevalence of CDs should be present in those disorders and symptoms commonly seen in restrictive mental health settings.

Comprehensive assessment of CDs is expensive, time-consuming, and impractical in most clinical settings, particularly on inpatient and most time-limited partial hospital programs. Self-report measures rarely focus upon CDs as a symptom, dimensional or categorical area of concern. We are unaware of any self-report instrument that provides the data for CD screening. Considering the glaring lack of attention to this issue and need for quality improvement and enhanced performance by our clinicians, we implemented an initiative to: (1) Estimate the prevalence of

self-perceived CDs in older children and adolescents in settings where CDs had been rarely noted on admission or diagnosed; (2) Determine the ability of older children and adolescents to self-report communication difficulties and need for appropriate services; and (3) Develop a feasible means for clinicians to identify these deficits easily and promptly.

The overall intent is to improve identifying common, often undiagnosed CDs that can significantly affect response to treatment and long-term outcome. Our major hypotheses is that youth receiving restrictive psychiatric services infrequently have their CD deficits identified, and that most of youth with CDs can report such deficits in a simple, cost-effective manner.

Methods

A survey questionnaire was developed to allow reporting of self-perceived communication difficulties in receptive-and expressive-language and in social (pragmatic) communication for children and adolescents ages 11 through 18 years, and to determine the prevalence of such. The youth were served in university inpatient (CAIS) and Therapeutic Day School (TDS) services. These patients have been diagnosed with the full range of emotional and behavioral difficulties and diagnoses that are typically found in such restrictive mental health settings. The questionnaire was developed based upon criteria listed in the DSM-5 for Communication Disorders [1]. The study was IRB-approved for Human Subject Protection as exempted from parental permission. All patients and students were assured anonymity, gave assent and consent. All surveys were administered by physicians.

Inclusion and exclusion criteria—All children admitted to the two university programs were invited to participate in the study by their attending psychiatrist. Youth with limited intelligence or clinical conditions precluding reliable reporting were excluded. Wards of the Court or under commitment status were not recruited.

The youth either alone or with one peer were interviewed by one of four psychiatrists. They were asked to help with the survey, and told they need not need to take the survey or answer the questions. The survey's first sheet for informed consent was read to the patients explaining their rights as study subjects with Human Protection language allowing them to opt out of the study without any negative consequences to them or their care. They were then asked to check on the survey form that this statement was read to them, that they understood taking the survey was voluntary, that their answers would not be known to the treatment team unless they tell their doctor or clinician about their responses, and that taking or not taking the survey would have no effect on their treatment or staff attitude towards them. Then the study and its purpose was explained and a figure pictorially explained the meaning for each of the answers from "Almost all of the time", through Most of the time (more than half the time), Often (less than half the time, but often enough to have problems), Some of the time (a few times a day), Hardly ever (a few times a week), to Never. The survey questions detailed in **Table 1** reflect material that should be part of any thorough clinical interview of a youngster with emotional or behavioral problems requiring mental health evaluation and treatment. Interviewers

were instructed not to look at the responses. Given that many youth with language deficits also suffer from dyslexia, after the introduction, the patients were read the questions and set of responses though many completed the form on their own. They were also offered the pictorial representation of each response.

The first set of statements asked about the extent to which they have trouble with: understanding what teachers, parents, or peers say; what they read; and with saying or writing what they think. The second set asked in the same forced-choice format from "Almost all of the time", through "Never" about how often deficits in receptive and expressive language or social communication caused them to feel angry when they were unable to effectively communicate. The final sets of questions, in a "Yes" or "No" format asked whether they had received services for communication deficits, and finally whether they would like help in related specified areas. As each question and the response choices were read, the children were directed to circle the response that best describes them. The interviewer completed a cover sheet with a number that was the sole identifier for data analysis and indicated whether the patient required use of a pictorial frequency representation for each response, level of cooperativeness, and whether one or two patients were interviewed at that time. The youth were encouraged to discuss any concerns about problems with language or learning with their doctor or clinician. Data collection ended once 200 surveys were completed. The bulk of surveys were completed by CAIS patients (N=146). Most were administered to a single youth, rarely were 2 youth interviewed at the same time. The pictorial aid was used by some younger TDS students and none of the older students or CAIS patients.

Simple frequency counts by type of disability, degree of frustration with perceived competency deficit and past or desired services by clinical site, gender, and age were analyzed. Self-reported communication deficits were coded on an ordinal scale ranging from 1 (least severe) to 6 (most severe) where 6 is anchored at 'Almost all of the time'; 5='Most of the time'; 4='Often (less than half the time)'; 3='Some of the time (a few times a day)'; 2='Hardly ever (a few times a week)' and 1='Never'. A factor analysis was conducted on this scale and two factors were extracted. Correlations between the two factor scores (unit-weighting) and four items assessing prior receipt of help, and five assessing perceived need for current help were also analyzed.

Results

Two factors explaining 56% of the variance were extracted. A varimax rotation of the two factors revealed (Table 2) a perceived Communication Deficit factor and an Anger/Frustration factor associated with those deficits. The eight items loading on the first factor comprised a coherent internally consistent subscale (Cronbach coefficient alpha=0.86). Hence the eight items were averaged for each study participant to comprise a Communications Deficit score, with higher scores indicating greater self-reported deficits. The five items loading on the second factor also comprised a coherent subscale (Cronbach coefficient alpha=0.87) in this cases the five items were averaged by participant to compose an Anger/Frustration score, where the source of anger revolves around the communication deficits.

Males (N=81) scored significantly higher ($F(1,198)=7.88, p=0.004$) on the Communications Deficit score than did females (N=119) but there was no significant difference ($p>0.15$) between males and females on Anger/Frustration. Correlation between age and Communication Deficit was $-0.14 (p<0.05)$ whereas correlation between age and Anger/Frustration was $-0.01 (ns.)$ The mean age was 14.7 years (s.d.=1.9) with ages ranging from 11 to 18.

The two subscales—Communication Deficit and Anger/Frustration—were then correlated (point biserial correlation) with the four dichotomous yes/no items assessing the participant's prior receipt of help with communicating, and the five yes/no items assessing perceived need for current help. The correlations with prior receipt of help were small and in many cases, non-significant, with coefficients ranging from 0.03 to 0.23. In marked contrast, the correlations with current need for help were all significant ($p<0.0001$) and much larger than was the case for the former set; here correlations ranged from 0.29 to 0.45, i.e., the greater the communication deficit perceived in self, the greater the perceived need for help in multiple domains (e.g. Understanding the directions adults give me). Similarly, the greater the anger/frustration reported around such deficits in communicating, the greater the perceived need for help in the same domains. However, there was little or no relation between either perceived deficits or associated anger and help received to date, suggesting considerable unmet need for services in this regard. However, males reported significantly more often

Table 1 Survey questions.

Skill Deficit*
I have trouble understanding what the teacher is telling me and teaching me
I have trouble understanding the directions that my mom or dad give me
I have trouble understanding what the teacher is writing
I have trouble understanding what other kids are saying to me or to other kids
I can read the words but have trouble understanding the meaning of what I'm reading
I have trouble telling my mom, dad, or teachers what is on my mind
Kids have trouble understanding what I'm trying to say to them
I have trouble in writing things the way I want them to say or to mean

Note: *Wording used in the survey for communication functions

Table 2 Factor analysis of self-perceived language competence.

	Factor 1	Factor 2
Teacher tells me	0.67	0.37
Mom directions	0.54	0.36
Teacher write	0.71	0.10
Know what kids say	0.56	0.42
Meaning reading	0.79	0.21
Say on my mind	0.50	0.40
Kids understand me	0.73	0.21
Trouble writing	0.67	0.42
Anger to tell teach	0.27	0.77
Anger to tell mom	0.27	0.82
Anger kids	0.15	0.85
Anger read	0.43	0.62
Anger saying on mind	0.37	0.74

receiving help than females “to understand others better or more clearly” ($p=0.012$) and indicated that they “would like help or more help in understanding what other kids are telling me” ($p<0.0001$), “in understanding what adults are telling me” ($p=0.003$, “in being able to write what I want to say” $p=0.033$), and “to understand what I’m reading” ($p=0.008$).

Frequency of each deficit item is shown **Table 3**. Cumulative scores from “Almost all of the time” to “Often” are classified as Severe; those from “Almost all of the time” through “Some of the time” are presented as “Concerning”. Depicted rates depicted are well above those reported for the general population reported as about 5% [6]. The lowest communication deficit prevalence is reported for understanding other kids (Severe=10%, concerning 24%). For understanding what the teacher is saying, 28% indicated this as Severe and 54% as concerning. At the highest reported level of competence lack is in telling parents what is on their mind -53% Sever and 76% Concerning.

The prevalence of reported items for severe classification is similar across the two programs (**Table 4**). They range on the CAIS from 53% for “I have trouble telling my mom, dad, or teachers what is on my mind” and 55% for the TDS students. For “I have trouble understanding what the teacher is telling me and teaching me” 27% of the CAIS patients reported significant deficits, similar to the 30% for the CTDS students. Far fewer youth reported significant problems with “I have trouble understanding what other kids are saying to me or to other kids”, 7% for CAIS and 17% for TDS. Likewise, 11% of both groups indicated frequently experiencing “I have trouble understanding what the teacher is writing.” No adverse responses were reported. Several boys on the CAIS declined to complete the survey once the narrative was read to them prior to administering the survey.

An informal review of the TDS adolescent records completing the survey indicated fewer than 7% of the students had been diagnosed with a language or communication disorder prior to admission; rarely was a CD identified on the CAIS prior to initiation of this study and during the early period of survey administration. Improved awareness of CDs became evident following sharing of the aggregated study results. Feedback from TDS students who participated in the study was unanimously positive.

Discussion and Conclusion

Language impairment is a common pediatric problem possibly affecting about 5% or more of children [6,12]. Given the high rate of reported comorbid disorders commonly diagnosed in restrictive clinical settings (i.e., ADHD and behavior disorders), significant numbers of patients would be expected to manifest CDs. The CDC [12] found, by parent report of children age 3-17 years in 2007 and 2009, that about 15% with ADHD also had been diagnosed with speech and language disorders and 25% of those with behavior disorders were diagnosed with CD; of great interest, as well, 25% of those diagnosed with CD had comorbid ADHD and 17% with behavior disorder diagnoses

In a population of youth frequently referred for disruptive and aggressive behavior, CD prevalence should be elevated. As Gallagher [18] notes, aggressive children use, due to limited

Table 3 Cumulative self-report communication deficit scores.*

Function	Cumulative % to Often	Cumulative % to Sometimes Concerning
Understand teacher saying	28	54
Understand parent directions	24	40
Understand teacher writing	11	30
Understand what kids saying	10	24
Understand what I’m reading	20	45
Telling parents what on mind	53	76
Kids understanding me	21	38
Writing to sat what I mean	22	40

Note: *Cumulative scores from “Almost all of the time” to “Often” are classified “Often”; *Cumulative scores from Almost all of the time” through “Some of the time” are presented as “Concerning”

Table 4 Comparison between sites of often occurring communication deficits.

Skill Deficit*	CAIS #/total (%)	TDS #/total (%)
Understand parents’ directions	32/144 (22)	11/53 (21)
Understand what teacher is telling me	39/145 (27)	16/53 (30)
Understand what teacher is writing	16/144 (11)	6/53 (11)
Understand what kids saying	10/144 (7)	9/53 (17)
Read but not understand what read	24/144 (17)	15/53 (28)
Trouble telling parents what on mind	76/143 (53)	29/53 (55)
Kids have trouble understanding me	26/144 (18)	15/53 (28)
Trouble writing what is meant	26/144 (18)	5/53 (9)

Note: *Comparing the inpatient population (CAIS) to the therapeutic day school population (TDS) on skills listed too often as a problem

language skills, less verbal communication and more direct physical actions to solve interpersonal problems. This seems germane to the studied population surveyed. Children prone to noncompliance have long been considered likely to have receptive language deficits that limit their ability to comprehend and comply with repeated warnings or verbal cues [19]. As a result, they may misinterpret communications, become frustrated, and consequently develop chains of miscommunication and antisocial behavior patterns [20,21] that often lead to referral for restrictive services or incarceration [22].

As expected, a large percentage of youth in both clinical settings reported substantial communication deficits with overlapping

problems in learning. Few had been identified with CDs upon admission and particularly from the acute inpatient setting upon discharge. Some interesting results require further comment, e.g., lack of differences between the hospitalized and the day school groups. One would expect a greater proportion of the TDS youth, who overall represent a more chronic clinical picture and academic difficulties, to report higher frequencies of CD deficits than the more acute inpatient population; but no significant difference was found between those groups. Males scores significantly higher than females on communication deficit frequency scores than females are not unexpected. The finding that the older youth reported significantly less communication deficits warrants an explanation.

The low and in many cases, non-significant correlations between perceived deficits with prior receipt of help with coefficients ranging from 0.03 to 0.23 support our hypotheses that a large number have unmet service needs. In marked contrast to low correlations with actual service receipt, correlations with current need for help were all significant ($p < 0.0001$), with correlations ranging from 0.29 to 0.45. Thus, the greater the self-perceived communication deficit, the greater is the perceived need for help across multiple competencies. Similarly, the greater the anger/frustration reported around such deficits in communicating, the greater the perceived need for help in those domains.

Also of interest, males reported significantly more often receiving help than females: "to understand others better or more clearly" ($p = 0.012$); indicating that they "would like help or more help in understanding what other kids are telling me" ($p < 0.0001$) even as reporting not much of a problem in that area; "in understanding what adults are telling me" ($p = 0.003$); "in being able to write what I want to say" ($p = 0.033$); and "to understand what I'm reading" ($p = 0.008$). The fact that they recognize their needs supports our impressions and warrants closer attention. ~2770

Some findings that should have been expected from youth in restrictive services include a very large proportion (over half) indicating difficulties in communicating with parents and feeling angry/frustrated by this (over 50% Severe and over 70% concerning) as contrasted to far lower problem prevalence in communications with teachers (11% Severe and over 25% concerning). Such discrepancies strongly suggest poor consideration to questionnaire wording regarding failure to consider psychodynamic contributions in phrasing. This issue has been addressed in a revised questionnaire version based upon insights gained from this study.

Clinicians have long and consistently been instructed to inquire about learning and language issues in their assessments and of comorbid disorders in children with CDs and learning disabilities [6,7]. Recent evidence has accumulated from a study documenting the overlap between CDs and ADHD, recommending the necessity to evaluate for the other if either of these diagnoses is being considered [23]. Yet this practice expectation is infrequently implemented in most clinical settings, including outpatient mental or behavioral health clinics. An encounter during the study best illustration principles we are espousing. After completing the survey and encouraged to talk to her doctor, teacher, or therapist about any item on the survey of concern to her, the attending/

interviewing psychiatrist asked, "Do you have any questions?" The youth responded, "Dr. M, you always ask if we have any questions. You never ask if we understand!" Assuring adequate communication with patients, caregivers and care staff is critical for optimal case formulation, treatment planning and outcome.

Results of this performance improvement initiative were shared with the participating program administrators and clinicians to dialogue as to how best to move forward with the derived insights such as the discrepancies between self-report of communication deficits and services need compared to recognition and reporting by clinicians. A second phase of the performance improvement initiative intends to: 1) Measure outcome resulting from the study (i.e., increase in awareness of the deficits and addressing such from implementing the study and informal sharing of the results with direct care staff); 2) Measure impact of greater identification of CDs following formally sharing study results and discussing need for CD awareness by longitudinal electronic record review; and 3) Validate a revised questionnaire; and 4. Replicate the findings across other clinical populations with the revised scale.

All limitations that have been described for self-report questionnaires apply to this study, e.g., looking good or looking bad responses that can bias the results. Wording was ambiguous at times for both the deficit items and the frequency scale. For example trouble communicating with parents has as much or more of a dynamic etiology than secondary to CDs. Measure at the bottom end of the frequency measure were not adequate distinct. Validity and test-retest reliability of the scale has not been determined. Items concerning whether prior treatment for the deficits had been received were administered and analyzed but minimally discussed due to their potential for ambiguity and lack of clarity, (i.e., therapies to address CD deficits were broadened by the respondents to include non-language specific counseling or other types of therapy rather than the intended speech and language therapy). Insufficient attention was given to pragmatic language deficits. Though few patients had autism spectrum disorder diagnoses, we failed to determine the proportion of such children as a possible confounder. Moreover, such important variables as culture and English as a second language as potentially critical variable were not detailed.

In conclusion, systematic data collection and analysis document a substantial portion of youth, served in restrictive psychiatric settings, self-report significant communication deficits, frustration with such, low level of prior needed services, and desire for assistance to address the deficits. Administrators and clinicians need to be alerted to these issues and take appropriate steps to improve the quality of care provided to vulnerable populations served in such settings. Further research is indicated and required in this critical but poorly addressed area. Educators must emphasize in training the importance of assessing for adequate competency in communication skills in those we provide care. From results derived from this survey, we must strive to improve our early awareness of CDs and their deficits so that they can be addressed during the clinical episode or recommendations made for further assessment upon discharge. Screening questions or a user-friendly scale built into evaluations for admission to clinical settings, especially the most restrictive should be routinely included in the initial assessment to markedly improve care.

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