Development of a Social Skills Assessment Screening Scale for Psychiatric Rehabilitation Settings: A Pilot Study

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ABSTRACT

Context: Deficits in social skills may present in a range of psychiatric disorders, particularly in the more serious and persistent conditions, and have an influence on functioning across various domains. Aims: This pilot study aimed at developing a brief measure, for structured evaluation and screening for social skills deficits, which can be easily integrated into routine clinical practice. Settings and Design: The sample consisted of 380 inpatients and their accompanying caregivers, referred to Psychiatric Rehabilitation Services at a tertiary care government psychiatric hospital. Materials and Methods: The evaluation included an Inpatient intake Proforma and the 20-item Social Skills Assessment Screening Scale (SSASS). Disability was assessed using the Indian Disability Evaluation and Assessment Scale (IDEAS) for a subset of 94 inpatients. Statistical Analysis Used: The analysis included means and standard deviations, frequency and percentages, Cronbach’s alpha to assess internal consistency, t-tests to assess differences in social skills deficits between select subgroups, and correlation between SSASS and IDEAS scores. Results: The results indicated the profile of social skills deficits assessed among the inpatients with varied psychiatric diagnoses. The “psychosis” group exhibited significantly higher deficits than the “mood disorder” group. Results indicated high internal consistency of the SSASS and adequate criterion validity demonstrated by correlations with select IDEAS domains. Modifications were made to the SSASS following the pilot study. Conclusions: The SSASS has potential value as a measure for screening and individualised intervention plans for social skills training in mental health and rehabilitation settings. The implications for future work on the psychometric properties and clinical applications are discussed.

Key words: Criterion validity, psychiatric rehabilitation, screening, social skills assessment

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INTRODUCTION

The importance of social skills is exemplified in the words of the famous Greek philosopher, Aristotle; “Man is by nature a social animal.” Deficits in social skills may be present in a range of psychiatric disorders, particularly in the more serious and persistent conditions, and have an influence on functioning across various domains. Recovery-oriented services represent a shift from categorical diagnoses of mental illnesses to look at functional parameters and also emphasise social inclusion and quality of life. Social competence can have a protective effect in the trajectory of severe mental illnesses and social skills training is an important part of the armamentarium of psychosocial interventions\(^1\) in rehabilitation settings. The Schizophrenia Patient Outcomes Research Team guidelines\(^2\) recommend social skills training as one of the key interventions for schizophrenia and this is supported by a strong evidence base.\(^3\)

Studies assessing rehabilitation needs among persons with schizophrenia in India found that social skills training is a felt need by 30% of the caregivers.\(^4,5\) Social skills deficits are viewed as an important target of intervention in other severe mental illnesses as well; 20% of caregivers of persons with affective disorders and 23.3% of caregivers of persons with schizophrenia expressed this need.\(^6\) A clinical audit of 197 inpatient referrals for Psychiatric Rehabilitation Services (PRS) over a 5-month period, indicated that social skills training was the third most frequently mentioned reason for referral.\(^7\) Recent research in India has reported on the feasibility and efficacy of a culturally modified social skills training module as a component of Integrated Psychological Treatment for persons with schizophrenia.\(^8\) Both practice and research in this area call for a brief measure of social skills deficits for structured evaluation that can be easily integrated into routine clinical practice. Social skills training tends to be resource-intensive and the screening of patients in clinical and rehabilitation settings can aid in the identification of clients based on their needs. The Social Occupational Functioning scale,\(^9\) developed in India, assesses a broader spectrum of adaptive living skills, social appropriateness and interpersonal skills, specifically among persons with schizophrenia.

This paper describes the development and pilot study of a brief tool for assessment and screening of social skill deficits at the first contact with patients referred to a psychiatric rehabilitation setting at a tertiary care mental health hospital. The pilot study also aimed to examine the profile of social skills deficits among inpatients referred for rehabilitation inputs, the criterion validity and internal consistency of the measure, and to assess the need for any modifications in the measure.

MATERIALS AND METHODS

Sample

The sample consisted of 380 consecutive inpatients and their accompanying caregivers, referred to PRS at a tertiary care government psychiatric hospital in a metropolitan city in India, during a two-year time frame.

The day care facility (with about 40 outpatient day boarders), has a structured program with training in vocational, educational, social, independent living skills, yoga, leisure and recreational activities, cognitive, social and disability assessments, individual and family interventions, home-based rehabilitation, caregiver groups and liaison with community organizations for supported and competitive employment. The center is staffed by personnel, consultants and trainees from multidisciplinary backgrounds.

Rehabilitation services are also extended to inpatients, referred by the treating adult psychiatry units, typically for vocational rehabilitation, establishment of a daily activity schedule, social skills training and cognitive rehabilitation.\(^7\) Inpatients are referred for varying durations (days to months) based on felt needs and practical issues like length of hospitalization.

Tools used

\textit{Inpatient assessment proforma}

This semi-structured proforma was designed by the multidisciplinary team for the assessment of inpatients referred for PRS. It includes socio-demographic data such as age, gender, marital status; clinical data such as diagnosis, symptom status, drug compliance; and rehabilitation specific information including reason for referral, expected duration of admission, understanding of illness and expectations, expressed emotions, social functioning and the rehabilitation plan. Intake information is collected through interviewing referred inpatients, their caregivers and from documented information in the case file. The intake session is conducted by trainees from multidisciplinary backgrounds (psychiatry, psychology, psychiatric social work, or nursing). The Inpatient Assessment Proforma (IAP) is available on request.

\textit{Social skills assessment screening scale}

The scale was developed by team members of PRS to screen for social skills deficits among referred inpatients and day boarders. The items were selected based on review of literature on social skills deficits in persons with severe mental illnesses, clinical experience with
In a recent study, the Indian Disability Evaluation and Assessment Scale (IDEAS) scale demonstrated adequate internal consistency (Cronbach’s alpha = 0.708) and construct validity among patients with residual schizophrenia.11,12

### Methods

Institutional ethics committee clearance was obtained for this study. Sociodemographic and clinical details were recorded on the IAP and social skills assessment was done using SSASS by the trainees from multidisciplinary backgrounds posted at the PRS, for all inpatient referrals during a 2-year period. During this time, disability was assessed and documented using the IDEAS for a sub-sample of 94 inpatients. A retrospective chart review was carried out and the data was entered for analysis. The members of the PRS team also obtained feedback about the utility of the scale, ease of administration and any changes required in the content and rating system of the SSASS from trainees who used the scale.

### Statistical analysis

The data was analyzed by GNU PSPP Statistical Analysis Software 0.9.0-g745ee3.13 The demographic and clinical characteristics, and social skills ratings were represented using descriptive statistics including mean, standard deviations (SDs), frequencies, and percentages. Missing value imputation was not carried out. *t*-tests were used to assess the differences in the levels of social skills between groups based on gender (male, female), diagnostic category (psychosis, mood disorders) and locale (rural, urban). Internal consistency was assessed using the Cronbach’s alpha. Pearson product-moment correlations were used to assess the associations between level of social skill deficits and the following variables; level of disability on IDEAS subscale and total scores, the duration of illness and age.

### Results

A total number of 380 patients were assessed. The demographic and selected clinical characteristics of this sample are depicted in Table 1. The sample population was aged between 14 and 66 years of age with mean age of 30.68 years (SD = 10.08). The majority of patients were single, male, from middle socio-economic status and urban background, with up to 10 years of education. Psychotic disorders (schizophrenia, acute and transient psychotic disorders, schizophrenia, delusional disorders, schizoaffective disorder) formed the majority of the diagnosis (50.1%), followed by mood disorders (25.6%). There was a wide range of duration of illness, ranging from 3 months to 38 years (M = 8.50 years; SD = 6.98).

The pattern of social skills deficits is depicted in Table 2. The key social skills that were impaired across the three domains were largely in the area of Social Behavior. The most prominent inadequacies...
Table 1: Demographic and clinical characteristics of inpatients referred to psychiatric rehabilitation services (n = 380)

| Variable                                | Mean (SD)/n (%)             |
|-----------------------------------------|-----------------------------|
| Age (in years), mean (SD)               | 30.68 (10.08)               |
| Duration of illness (in years), mean (SD)| 8.50 (6.98)                |
| Gender, n (%)                           |                             |
| Male                                    | 230 (60.5)                  |
| Female                                  | 150 (39.5)                  |
| Marital status, n (%)                   |                             |
| Single                                  | 203 (64.9)                  |
| Married                                 | 89 (28.4)                   |
| Separated                               | 17 (5.4)                    |
| Divorced                                | 2 (0.6)                     |
| Widowed                                 | 2 (0.6)                     |
| Education, n (%)                        |                             |
| Illiterate                              | 11 (3.0)                    |
| Up to tenth grade                       | 155 (42.1)                  |
| Up to twelfth grade                     | 64 (17.4)                   |
| Graduation                              | 79 (21.5)                   |
| Postgraduation                          | 59 (16.0)                   |
| Socioeconomic status, n (%)             |                             |
| Lower                                   | 149 (40.6)                  |
| Middle                                  | 185 (50.4)                  |
| Higher                                  | 33 (9.0)                    |
| Location, n (%)                         |                             |
| Urban                                   | 215 (71.0)                  |
| Rural                                   | 88 (29.0)                   |
| Primary psychiatric diagnosis, n (%)    |                             |
| Psychotic spectrum                      | 190 (50.1)                  |
| Mood spectrum                           | 97 (25.6)                   |
| Depression                              | 56 (14.8)                   |
| Mania and bipolar disorder              | 41 (10.8)                   |
| Anxiety spectrum                        | 55 (14.5)                   |
| Substance use disorders                 | 11 (2.9)                    |
| Others                                  | 11 (2.9)                    |
| Presence of intellectual disability     | 24 (6.3)                    |
| Presence of comorbidity                 | 80 (21.0)                   |

Total n's may vary due to missing data, SD = Standard deviation

Concerned the patients’ difficulties in reaching out to help others voluntarily (26.3%), difficulties in empathizing and understanding another person’s perspective or emotions (25.8%). Difficulties were also most noticeable in the areas of expressing and sharing one’s emotions (23.0%) and experiences (20.1%). In the domain of Verbal Behavior, the social skills most frequently rated as inadequate, pertained to the active initiation and engagement in a conversation (24.3%) and appropriate turn-taking during this interaction (19.5%). Nonverbal behavior and Communication was relatively less impaired and difficulties in the use of gestures and facial expressions emerged as the most commonly expressed concern (16.0%).

Additional analysis examined difference in the level of social skills deficits based on gender (male vs. female), primary psychiatric diagnosis (psychosis vs. mood disorder), and residence (urban vs. rural). The results indicated the absence of any significant gender differences, $t(260) = -1.08; P = 0.281$ or any differences between patients from urban versus rural settings, $t(221) = 0.97; P = 0.335$. Social skills deficits differed between the two largest diagnostic groups of inpatients referred for rehabilitation services, $t = -3.80 (189), P = 0.000$. Inpatients diagnosed with psychosis ($M = 24.28; SD = 11.86$) had significantly greater social skills deficits when compared with those with mood disorders ($M = 31.00; SD = 10.28$). The deficits were prominent in the psychosis group in all the domains of nonverbal behavior and communication ($M = 5.50; SD = 2.27$ vs. $M = 6.46; SD = 1.92$; $t = -4.31 (358), P = 0.000$), verbal communication ($M = 7.22; SD = 3.89$ vs. $M = 9.21; SD = 3.37; t = -5.13 (351), P = 0.000$), and social behavior ($M = 11.11; SD = 6.41$ vs. $M = 15.57; SD = 5.28; t = -6.01 (251), P = 0.000$) as compared to mood disorders.

There was no significant correlation between age and the level of social skills deficits ($r = 0.07; P = 0.264$). Significant correlation between the duration of illness and the level of social skills deficits was absent ($r = -0.03, P = 0.709$).

For a subset of the sample ($N = 84$), IDEAS was used to measure disability. The Pearson product-moment correlations were computed between the SSASS total scores and the subscale and total scores on IDEAS [Table 3]. The level of social skill deficits assessed on the SSASS were significantly correlated with the overall degree of disability on the IDEAS scale ($r = -0.53; P = 0.000$). There were significant relationships with two of the four disability domains; Interpersonal Activities ($r = -0.61; P = 0.000$) and Communication and Understanding ($r = -0.62; P = 0.000$).

Additional analysis indicated that the 20 item SSASS had a high level of internal consistency, as determined by a Cronbach’s alpha of 0.97.

Feedback and review of the Social Skills Assessment Screening Scale

The review meetings in the multidisciplinary rehabilitation team examined the feedback about the SSASS as a brief screening method and a few modifications were made [Table 4]. The item descriptions for select items were expanded and some examples added to facilitate the rating process. The three-point rating system was changed to a simpler two-point rating of adequate/inadequate. This was based on the significant variations across raters in the way they perceived and used the ‘average’ rating point of the SSASS. The simpler rating system was also
Table 2: Pattern of social skills deficits assessed using the social skills assessment screening scale (n=380)

| Item                              | Mean (SD) | Inadequate n (%) | Average n (%) | Adequate n (%) |
|-----------------------------------|-----------|------------------|---------------|---------------|
| SSASS total                        | 27.91 (11.47) |                  |               |               |
| Nonverbal behavior and communication | 5.95 (2.17)    |                  |               |               |
| Grooming and appearance            | 1.53 (0.60)     | 21 (5.6)          | 135 (35.7)    | 222 (58.7)    |
| Establish and maintain eye contact  | 1.49 (0.67)     | 38 (10.1)         | 116 (30.8)    | 223 (59.1)    |
| Use gestures and facial expressions | 1.35 (0.74)     | 60 (16.0)         | 126 (33.5)    | 190 (50.5)    |
| Maintain interpersonal distance    | 1.57 (0.61)     | 24 (6.4)          | 112 (29.9)    | 239 (63.7)    |
| Verbal communication               | 8.11 (3.78)     |                  |               |               |
| Greet other people appropriately   | 1.34 (0.75)     | 64 (17.1)         | 119 (31.8)    | 191 (51.1)    |
| Initiate a conversation            | 1.21 (0.81)     | 91 (24.3)         | 116 (30.9)    | 168 (44.8)    |
| Listen to a conversation           | 1.42 (0.70)     | 45 (12.0)         | 128 (34.1)    | 202 (53.9)    |
| Take turns in conversation         | 1.33 (0.78)     | 73 (19.5)         | 104 (27.8)    | 197 (52.7)    |
| Communicate a message meaningfully | 1.42 (0.71)     | 48 (12.9)         | 120 (32.2)    | 205 (55.0)    |
| Paralinguistic speech (e.g., clarity, loudness, tone etc.) | 1.37 (0.70)     | 48 (13.0)         | 137 (37.1)    | 184 (49.9)    |
| Social behavior                    | 13.17 (6.27)    |                  |               |               |
| Understanding social situations - formal and informal | 1.40 (0.68)     | 42 (11.4)         | 138 (37.6)    | 187 (51.0)    |
| Change behavior according to situation (formal and informal) | 1.34 (0.72)     | 53 (14.6)         | 134 (37.0)    | 175 (48.3)    |
| Knowledge and use of appropriate manners | 1.40 (0.69)     | 42 (11.4)         | 137 (37.2)    | 189 (51.4)    |
| Engage in activities with others   | 1.15 (0.77)     | 67 (23.3)         | 109 (38.0)    | 111 (38.7)    |
| Use appropriate language           | 1.54 (0.64)     | 29 (8.0)          | 109 (29.9)    | 226 (62.1)    |
| Sustain a conversation/interaction | 1.29 (0.77)     | 72 (19.7)         | 117 (32.0)    | 177 (48.4)    |
| Express/share day to day experiences | 1.25 (0.77)    | 73 (20.1)         | 125 (34.4)    | 165 (45.5)    |
| Express and share emotions         | 1.20 (0.79)     | 84 (23.0)         | 125 (34.2)    | 157 (42.9)    |
| Help others voluntarily            | 1.13 (0.80)     | 95 (26.3)         | 123 (34.1)    | 143 (39.6)    |
| Empathize with others/understand their perspective | 1.14 (0.80)     | 90 (25.8)         | 121 (34.7)    | 138 (39.5)    |

SD – Standard deviation; SSASS – Social skills assessment screening scale

Table 3: Correlation between social skills deficits social skills assessment screening scale and the degree of disability Indian disability evaluation and assessment scale

| Item                              | 1   | 2   | 3   | 4   | 5   |
|-----------------------------------|-----|-----|-----|-----|-----|
| IDEAS SC                          | -0.21 | -   |     |     |     |
| IDEAS IA                          | -0.61** | 0.21* | -   |     |     |
| IDEAS CU                          | -0.62** | 0.18 | 0.61** | -   |     |
| IDEAS W                           | -0.10 | 0.23* | 0.19 | 0.08 | -   |
| IDEAS total                       | -0.53** | 0.54** | 0.67** | 0.61** | 0.64** |

**Correlation is significant at the 0.01 level (two-tailed); *Correlation is significant at the 0.05 level (two-tailed). SC – Self-care; IA – Interpersonal activities; CU – Communication and understanding; W – Work; SSASS – Social skills assessment screening scale; IDEAS – Indian disability evaluation and assessment scale

DISCUSSION

The results of the pilot study suggest that the SSASS could be a brief screening tool for use in mental health and rehabilitation settings. The brevity of the measures lends itself to integration into the routine clinical intake and processes. Analysis of responses to individual items and the profile of deficits and strengths can help in defining individualized intervention plans. The inclusion of “nonskill factors”[15] in the modified version of the SSASS can help identify additional targets for intervention. This initial assessment can be followed up by more detailed evaluation using role plays, observations and other methods.

The results provided some support for the psychometric properties of the scale, with high internal consistency. Criterion validity was evidenced by the significant correlation with the IDEAS items that assessed disability in Interpersonal Activities and Communication and Understanding.

The prominent social skills deficits were in domains related to verbal communication skills and aspects of social perception. The recognition of social cognition...
deficits, including theory of mind, social perception and knowledge and emotional perception and processing, in schizophrenia, is growing. Future efforts to expand the assessment of social functioning should include culturally appropriate evaluations of social cognition, particularly in persons diagnosed with schizophrenia.

Social skills deficits are not restricted to schizophrenia and may manifest in different ways in persons with mood disorders, even in the euthymic state, and across other many other psychiatric conditions. This pilot investigation revealed that there were significantly greater social skills deficits across all domains, manifested by persons with schizophrenia when compared with the mood disorder group. This was consonant with recent research that reported that individuals with schizophrenia had worse social skills on a role play assessment than those with bipolar disorder or major depression, with people with schizoaffective disorder in between.

These initial findings are accompanied by a range of research and clinical implications. Further work is needed to establish additional psychometric properties of the measure including inter-rater reliability and construct validity using other measures of social skills. The use of the tool with a larger sample and across varied psychiatric diagnoses would provide additional information about its potential scope and utility as well as differential typical deficit profiles across various psychiatric disorders.

There is potential for the expanded use of the SSASS in clinical and rehabilitation settings. For instance, the use of SSASS items for rating social skills after role play enactments could also be explored. The current format of the SSASS does not lend itself to capturing small changes in social skills. The lack of descriptive anchor points makes the assessment vulnerable to subjective judgments of the rater. The number of scale points could be increased to enhance its sensitivity and possible use as a measure of pre to post changes following social skills intervention.

This pilot study provides initial promising results to support the use of the SSASS to train practitioners in screening for social skills deficits among patients in mental health and rehabilitation contexts.

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**Conflicts of interest**

There are no conflicts of interest.

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APPENDIX

Instructions:
Please read the following items carefully and rate each item by placing a tick in the appropriate column. Additional information has been provided for items marked *. The ratings may be based on your observation, interview with client and caregiver/s, case file data, and other additional sources of information.

Appendix 1: Social skills assessment screening scale

| Serial number | Item | Adequate | Inadequate |
|---------------|------|----------|------------|
| A  | Nonverbal behavior and communication | | |
| 1  | Grooming and appearance | | |
| 2  | Ability to establish and maintain eye contact | | |
| 3  | Ability to use gestures and facial expressions | | |
| 4  | Ability to maintain interpersonal distance* | | |
| B  | Verbal communication | | |
| 5  | Ability to greet other people appropriately | | |
| 6  | Ability to initiate a conversation | | |
| 7  | Ability to listen to a conversation | | |
| 8  | Ability to take turns in conversations* | | |
| 9  | Ability to communicate a message meaningfully* | | |
| 10 | Paralinguistic speech (clarity, loudness, tone etc.) | | |
| C  | Social behavior | | |
| 11 | Understanding social situations - formal and informal* | | |
| 12 | Ability to change behavior according to situation (formal and informal) | | |
| 13 | Knowledge and use of appropriate manners* | | |
| 14 | Ability to engage in activities with others* | | |
| 15 | Ability to use appropriate language* | | |
| 16 | Ability to sustain a conversation/interaction | | |
| 17 | Ability to express/share one’s day to day experience* | | |
| 18 | Ability to express and share emotions | | |
| 19 | Ability to help others voluntarily | | |
| 20 | Ability to empathize with others/understand their perspective* | | |

Any other comments:

Open-ended questions

Q1. Does the patient indicate any need for social skills training? If yes, what are the areas in social skills that the individual wants to work upon?

Q2. Does the parent/caregiver think that the patient needs social skills training? If yes, what are the areas in social skills that they think the patient should work upon?

Q3. Please comment on the premorbid personality of the patient.

Q4. Can the observed social skill deficit/s (if any) be attributed to the following? Please describe:
   (i) Ongoing psychopathology of the patient:
   (ii) Social anxiety
   (iii) Side-effects of any medication
   (iv) Limited opportunities for social interaction

Q5. Comment on the discrepancies in the patient’s behavior (if any):
   (i) Variations in information about patient’s social skills across different informants:
   (ii) Variations in information about patient’s social skills across different situations (e.g. at home vs. at social functions, with males vs. females, with peers vs. with authority figures)

Additional explanation for select items

*4. Interpersonal distance refers to the patient’s ability to maintain adequate distance while interacting or communicating with others. It also includes the ability to understand and respect interpersonal boundaries – while working or interacting. Inadequacy of this skill would be reflected in terms of intrusive behavior, being too close or too far apart while making conversation with others, etc.

*8. This item refers to the knowledge and use of turn-taking in a conversation in dyadic or group conversations, i.e., the ability to wait for one’s turn to communicate, without intruding in a conversation or neglecting the other individuals’ responses while communicating.

*9. Communicating a message meaningfully refers to the ability to be able to express what one intends to express (considering the fact that the patient can do so). It includes the use of complete meaningful sentences to convey a message, rather than using minimal words and/or gestures.

*11. This item refers to the knowledge and understanding of what constitutes formal and informal situations. Formal situations include those like a workplace or a social or religious function. Informal situations are those which mostly involve one’s peers; consist of activities such as playing, eating, etc.

*12. This item refers to the ability to regulate behavior according to different situations. Specifically, it
involves the understanding that one must obey rules, be disciplined, show respect and work/communicate cordially in a formal situation; and on the other hand, be able to play, share experiences and communicate freely in informal situations.

*13. Knowledge of appropriate manners would include the understanding as well as use of basic rules of courtesy – such as the use of “please”, “sorry”, “thank you”, “excuse me”, etc. in day to day communication and behavior.

*14. This item refers to the ability to play with peers, work cordially or engage in activities with a group of other individuals.

*15. This item refers to the using words of respect with authority figures in a conversation, and addressing peers appropriately while communicating with them. It also includes the understanding of what is not appropriate, such as abusive language, name calling and refraining from the use of such language.

*17. This item refers to the ability to share one’s day to day experiences – such as how one’s day was spent, the activities one was involved in, general events of the day etc.

*20. This refers to the ability to understand another person’s perspective/emotions. For example, understanding that engaging in behaviors such as teasing others, expressing anger either verbally or physically etc., are unpleasant for the individual being subjected to the same and would disturb/hurt them. It also includes the ability to understand another person’s feelings and needs and responding appropriately – for e.g. if the caregiver is unwell.