



RELATIONSHIP BETWEEN SCORS-G COMPOSITE AND ADJUSTMENT SCORE ON AN ADJUSTMENT INVENTORY: A CORRELATIONAL STUDY ON INDIAN ADOLESCENTS USING A NEWLY DEVELOPED THEMATIC APPERCEPTIVE TECHNIQUES (TATS) STIMULI.

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Abstract

The Thematic Apperceptive Techniques (TATs) or storytelling techniques use culture specific stimuli (pictures) to elicit stories and these stories are codable/interpretable using any of the wide variety of systems. With the aim to extend the use of this technique with Indian adolescents, a stimuli set (named as TATs Stimuli for Indian Adolescents) containing 22 pictures showing adolescent boys and girls in various situations was designed. Pictures along with Adjustment Inventory (AI) by M.S.L. Saxena were group administered to adolescent boys and girls (N=260). Stories were coded using The Social Cognition and Object Relations Scale-Global Rating Method (SCORS-G) and SCORS-G composite rating was obtained for each student. Total t-score (or adjustment score) was obtained on AI for each student. There was no significant difference between boys and girls on SCORS-G composite and adjustment score on AI. Pearson's r was calculated to determine the relationship between total adjustment score obtained on AI and SCORS-G composite. Descriptives have been given. The study supports the convergent validity of newly developed TATs stimuli set with M.S.L. Saxena's AI. It also addresses the call for developing and reporting SCORS-G local norms.

Keywords: Storytelling techniques, Thematic Apperceptive Techniques (TATs), SCORS-G, Adjustment, Indian Adolescents

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Introduction

The Thematic Apperception Test (TAT; Morgan & Murray, 1935; Murray, 1943) stimuli has been used widely to study personality. Further, there are many systems of coding/interpreting TATs narratives (see Lamba & Lone, 2022). The variety of storytelling picture sets and scoring/interpretive systems have been collectively known as Thematic Apperceptive Techniques (TATs; see Jenkins, 2017, p. 228). Culture-boundness and gendered nature of TATs stimuli sets has raised issues regarding applicability and usability of these sets universally, and this has led to development of several picture sets for use with various cultures/races (e.g., Costantino et al., 1981; Lagmay, 1965; Thompson, 1949), age-groups (e.g., Bellak & Bellak, 1950; Wolk & Wolk, 1971), purposes (e.g., Ammons et al., 1950; Briggs, 1954; Solomon et al., 1966) and so on. As far as Indian scenario is concerned, only stimuli set available is Indian modification of TAT by Chowdhury (1960), with 14 cards. It is opined by the researchers that the set is not that relevant to current scenario and too general to apply to any of the specific categories of Indian population viz., adolescents, children, old aged, young adults etc. Hence, as a small step in this direction, author developed a *TATs Stimuli for Indian Adolescents* as a part of his doctoral dissertation, so that problems of Indian adolescents can be assessed using this important and unparalleled technique of storytelling or TATs. Six pictures (out of 22) of newly developed stimuli set have been provided in appendix, so that the reader may get a glimpse of the set. It can be seen that the pictures relate to contemporary times, whereas, Indian modification by Chowdhury (1960) relates to those times.

As a part of this overall development project, a correlational study was carried out to find correlation of the SCORS-G composite rating (obtained by coding stories of 260 Indian school going boys and girls, written in response to TATs Stimuli set for Indian Adolescents) with total adjustment score obtained on Adjustment Inventory (Saxena, 1959) for validation of stimuli set. The null hypotheses are as follows:-

(a) There is no correlation between SCORS-G composite rating and total adjustment score obtained on AI by boys.

(b) There is no correlation between SCORS-G composite rating and total adjustment score obtained on AI by girls.

In addition, this study is important as there are only a few studies examining TATs narratives of non-clinical samples using SCORS-G (Stein & Slavin-Mulford, 2018, p. 11). Although a newly developed stimuli set has been used for eliciting narratives, still, Means and SD of SCORS-G composite ratings of this non-clinical sample may be considered as norms for school going adolescent boys and girls ageing 16 to 18 years. Stein and Slavin-Mulford (2018), citing lack of normative data, have encouraged to develop and report the same for SCORS-G.

Methods

Participants

The present study included 299 adolescent boys and girls recruited from three schools/institutes in Nashik district of Maharashtra. The age range was limited, i.e., 16 to 18 and all were senior secondary level students. The data was collected from 151 boys and 148 girls. Data for 24 boys and 15 girls was rejected due to various reasons, e.g., incompleteness, incomprehensible language/handwriting etc. So, final sample size consisted of 127 boys and 133 girls. The non-probability sampling method was used for sample selection.

Materials

Newly constructed TATs Stimuli for Indian Adolescents

Twenty-two newly constructed pictures, showing adolescents in various situations, were used to elicit narratives from participants. Out of 22 pictures, 04 were common for both the genders, and 09 each for boys and girls separately, thereby, each participant had to write 13 stories. A brief description of newly constructed pictures, in sequence of their administration, is provided in Table-1.

Table 1. Description of pictures of the newly developed TATs stimuli for Indian Adolescents

Picture Label	Description	For
1-B/1-G	Boy/girl looking at others running/walking in playground	Separate for boys and girls
2-B/2-G	Classroom scene and a boy/girl standing, other students and teacher present	
3-B/3-G	A boy and woman (saying something) on dining table/ A girl in negative mood and mother figure in background	
4-B/4-G	Two girls and a boy in group, one girl/boy walking away	
5-B/5-G	Group of boys drinking and playing cards/ A girl looking	

	upwards, drinks in front, some figures dancing in background	
6-BG	A group of adolescents in outdoor setting with trees and tents in background	Both genders
7-B/7-G	A boy/girl looking in mirror, in negative mood	Separate for boys and girls
8-B/8-G	A family scene with boy/girl in centre	
9-BG	A shadowy human figure sitting in window and looking away, background ambiguous	Both genders
10-B/10-G	A boy/ girl with book and mobile in front, woman looking from open door	Separate for boys and girls
11-BG	A boy approaching a girl standing in balcony	Both genders
12-B/12-G	A boy in negative mood and man saying something (in background)/ A girl and a man in front (saying something)	Separate for boys and girls
13-BG	A shadowy human figure with folded hands, looking upwards.	Both genders

The Social Cognition and Object Relations Scale-Global rating method (SCORS-G)

The SCORS-G (Stein & Slavin-Mulford, 2018) can be used for rating different kind of narratives including TATs stories. It produces ratings on eight scales which are: COM- Complexity of Representation of people, AFF-Affective Quality of Representations, EIM- Emotional Investment in Values and Moral Standards, EIR- Emotional Investment in Relationships, SC- Understanding of Social Causality, SE- Self-Esteem, AGG- Experience and management of Aggressive Impulses, ICS- Identity and Coherence of Self. **SCORS-G Composite** is the mean of these eight dimensions and it indicates overall object-relational functioning and/or personality functioning/ pathology. Lower scores indicate pathological object representations and scores in higher ranges suggest more mature and adaptive functioning. Volume by Stein and Slavin-Mulford (2018) is a comprehensive reference on rating

narratives using this system, and reliability and validity literature of the system.

The researcher spent considerable time in learning SCORS-G rating system through volume by Stein and Slavin-Mulford (2018). After gaining confidence by learning and relearning scoring rules many times (so that SCORS-G anchor points are on tips and no mistake happens), and scoring practice narratives (Chapters-3 to 10), the researcher undertook task of rating 34 practice narratives given in Chapter-12 of the book. The rating given by researcher were correlated (Pearson's r calculated using SPSS) with answers given in the book. Inter-rater reliability coefficient obtained on eight individual dimensions ranged from .75 to .93 and mean reliability was .84 (mean of all eight dimensions). The reliability coefficients obtained by researcher are given in Table 2. After this, rating of stories written by 260 participants of this study was undertaken by the researcher (first author).

Table 2. Inter-rater reliability coefficients on SCORS-G individual dimensions and mean reliability

Sl. No.	Variable	Inter-rater reliability coefficient (Pearson's r)
1.	Complexity of representation of people (COM)	0.76
2.	Understanding of Social Causality (SC)	0.80
3.	Identity and Coherence of Self (ICS)	0.84
4.	Self-Esteem (SE)	0.75
5.	Affective Quality of Representations (AFF)	0.93
6.	Emotional Investment in Relationships (EIR)	0.87
7.	Emotional Investment in Values and Moral Standards (EIM)	0.88
8.	Experience and management of Aggressive impulses (AGG)	0.91

Adjustment Inventory by MSL Saxena

The Adjustment Inventory (AI) by M.S.L. Saxena (1959) provides five separate measures of adjustment viz., Home, Health, Social, Emotional, and School/ College adjustment. These five separate measures are converted to t-scores using manual and then added to provide total t-score.

Any of the five measures, as well as total t-score is interpretable using norms provided. AI consists of 90 items, seeking either one of the responses from yes, no, or doubtful. The inventory has been standardized on 2529 students and has reliability coefficient of .87 (test-retest), .89 (split half), and .90 (rational equivalence). It has been correlated

with Dr. HS Asthana's AI with validity coefficient of .80 and has also been validated against criterion of teacher's estimates of adjustment of their students with coefficient of .71 (girls) and .63 (boys). Scoring for all 260 participants was undertaken by first author in accordance with manual provided with AI.]

Procedure

Various schools/institutes in and around Nashik city were approached with the research proposal and data collection. Initially, due to demandingness of task of writing 13 stories and answering 90 questions of Adjustment Inventory (total time required was approx. 2 hr and 30 min), all approached institutes denied permission to collect data, citing loss of student's study time, syllabus completion etc., as the reasons. Researcher found their concerns genuine and hence, offered a useful psycho-educative session on memory for those students who agree to respond. Response was positive from three schools/ institutes. Atleast one day before in each case, students were briefed about study, their rights, about psycho-educative session, and informed consent (was to be signed by each student on day of data collection, after parental permission). Confidentiality was assured to participants.

Data was collected in eight different sessions (dividing students to manageable numbers) for boys and girls. A single booklet containing personal information, informed consent form, blank pages for writing stories, and AI answer sheet was used for the purpose. Students were comfortably seated in their class room with projector and screen available for screening pictures. After distribution of response booklet, they were given adequate time to fill up personal information. Contents of informed consent form were briefed again and thereafter consent was signed by each student.

First, they were given instructions for writing stories. Instructions were given in easily understandable mixture of Hindi and English language. It was emphasized that they have to write a creative story in response to each of the 13 pictures shown on the screen one-by-one. Every story should have a beginning, middle, ending, and thoughts and feelings of characters. It was emphasized that they do not have to describe picture and, if they want, they can give imaginary name to story characters and places. It was told to write one story on one page and they will be

provided 30 seconds to view the picture and 6 minutes for writing the story. Prompt "last minute remaining" will be given to finish the story after 5 minutes. It was also emphasized that students can write stories in Hindi, English or mixed language, according to their comfort. With above instructions, story writing session started with 13 pictures of TATs Stimuli for Indian Adolescents projected on screen one by one.

After end of story writing session, students were given 10 minutes break for water and washroom, and then M.S.L. Saxena's AI question papers were distributed. Instructions, as provided in manual were given. During answering sessions, doubts about word-meanings of questions were cleared individually when asked.

At the end response booklet and question papers were collected, students were thanked, and as promised, psycho-educative session on memory was conducted which was enjoyed by students and as per verbal feedback, it was beneficial and informative for them.

Total 3380 stories (260 students X 13 pictures) were rated on eight SCORS-G dimensions resulting in whopping 27040 ratings (3380 stories X 8 ratings each). Such huge numbers were managed using excel and **SCORS-G Composite** rating was computed for each of the participants. This single number (SCORS-G composite) is considered representative of overall adjustment, as measured **using TATs stimuli for Indian Adolescents**. Further, after calculating story ratings, AI was scored and t-scores were obtained for each of five adjustment measures. These t-scores were added to obtain index of overall **adjustment**, as measured using M.S.L. Saxena's **Adjustment Inventory**.

Correlations and t-tests on adjustment scores obtained using projective measure and objective measure were carried out using IBM SPSS to answer the research questions. Results of various statistical tests are provided in following section.

Results and Discussion

Descriptive statistics

Means and SD's were calculated for SCORS-G Composite and overall adjustment score obtained on AI. Mean SCORS-G composite ratings for boys (N=127) was 3.80 (SD=.33) and girls (N=133) was 3.83 (SD=.29). As far as adjustment score on AI is concerned boys got mean score of 220.50 (SD=31.95) and girls got mean score of 223.82 (SD=34.24).

Difference between groups on SCORS-G composite rating and Adjustment score obtained on AI

After confirming assumptions for t-test were met, independent samples t tests (2-tailed) were carried out to determine whether two groups differed on these two variables. There was no statistically

significant difference in the mean SCORS-G composite rating between boys and girls, $t(258)=.77$, $p=.44$. Also, there was no statistically significant difference between boys and girls in the mean overall adjustment score obtained on AI, $t(258)=.81$, $p=.42$. The descriptives and t-test results for SCORS-G Composite ratings and adjustment scores on AI are shown in Table 3.

Table 3. Descriptives and t-test results for SCORS-G composite ratings and adjustment scores on AI for boys and girls

Variable	Group	M	SD	t	df	p-value	Significance
SCORS-G Composite rating on stories	Boys (N=127)	3.80	.33	.77	258	.44	Insignificant
	Girls (N=133)	3.83	.29				
Adjustment score on AI	Boys (N=127)	220.50	31.95	.81	258	.42	Insignificant
	Girls (N=133)	223.82	34.24				

Correlation between SCORS-G composite rating and Adjustment score obtained on AI

Pearson's r (2-tailed) was calculated separately for boys and girls to determine whether there is any correlation between adjustment score obtained using performance test (TATs) and using Adjustment Inventory. For boys, there was strong positive correlation between SCORS-G composite

ratings and adjustment score obtained using AI, $r(125)=.53$, $p < .001$. Similarly, for girls also there was strong positive correlation between SCORS-G composite ratings and adjustment score obtained using AI, $r(131)=.60$, $p < .001$. Hence, both the null hypotheses have been rejected. The results are shown in Table 4.

Table 4. Correlation (Pearson's r- 2 tailed) between SCORS-G composite ratings and adjustment score obtained on AI

Group	N	Pearson's r	df	p-value	Significance level	Effect Size
Boys	127	.53	125	<.001	0.01	Large
Girls	133	.60	131	<.001	0.01	Large

Strong and statistically significant positive correlation between TATs narratives SCORS-G composite ratings and total adjustment scores obtained on AI for both boys and girls group indicates validity of newly developed TATs stimuli set for Indian Adolescents.

This study is unique and useful as it provides SCORS-G composite rating descriptives of normal school going Indian adolescents (See Table 3), which may be used as a reference for interpretation of SCORS-G composite ratings of similar population. It addresses the call for developing and reporting SCORS-G norms (see Stein & Slavin-Mulford, 2018, p. 11) and more specifically local norms (Jenkins, 2017, p. 229).

Limitations

Data was collected in group and in written format, as opposed to common practice of face-to-face conversation in clinical settings. So, option of

prompting participants individually for missing parts of story (e.g., thoughts, feelings, ending etc.) was not possible. However, same had been emphasized in instructions before session started. Notwithstanding this, using group administration, a lot of time and effort can be saved and storytelling technique can be used in industrial psychology (personnel selection), and school settings (for identification of various issues among students). Descriptives provided in this study can be used as a comparison.

Having no other options available, the first author was self-trained on rating narratives using SCORS-G using book written by Stein and Slavin-Mulford (2018). Although considerable effort was made in learning and establishing inter-rater reliability, only 34 narratives given in Chapter-12 of the book were available for proving self. Now, having established high inter-rater reliability and thereafter rating 3380 TAT stories of adolescents,

author is confident in rating narratives using SCORS-G.

Summary and Conclusion

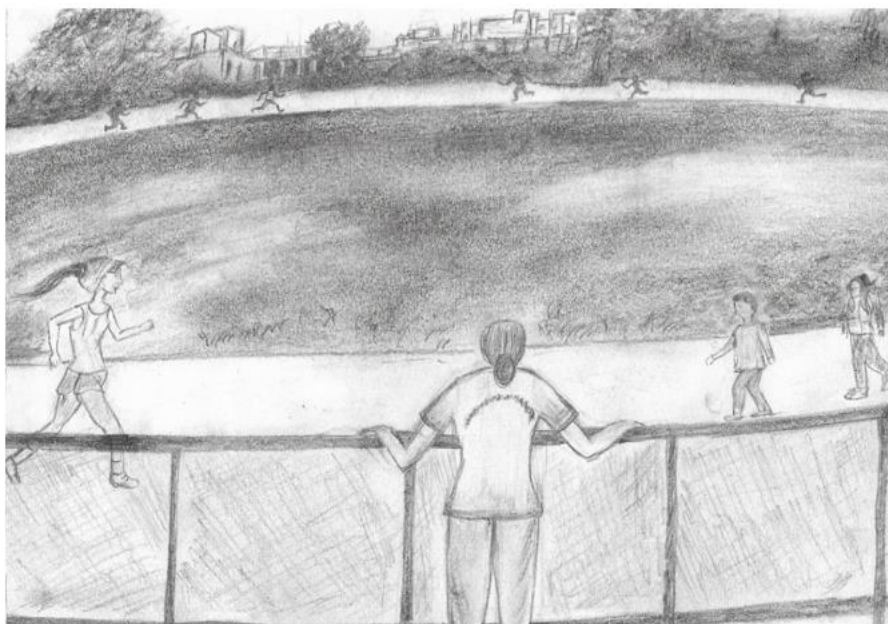
The narratives of 260 Indian students were elicited using newly developed TATs stimuli for Indian Adolescents, and were coded using SCORS-G. Simultaneously, Adjustment Inventory by MSL Saxena was also administered and total adjustment score was computed. T-test conducted to know difference of mean SCORS-G composite rating and AI score showed no significant differences between boys and girls group. Pearson's r for both groups, between SCORS-G composite ratings and total adjustment score on Adjustment Inventory was statistically significant with large effect size, indicating convergent validity of newly developed TATs stimuli for Indian Adolescents when narratives are coded using SCORS-G.

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Appendix

Picture No. 1-G



Picture No. 4-B



Picture No. 8-B



Picture No. 9-BG



Picture No. 10-G



Picture No. 12-B

