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Editorial

The Assessment of 'Health Anxiety' in the Context of COVID-19: Select Tests and Measures

Copious research studies have called attention to the onerous impact of the COVID-19 pandemic on instilling high levels of stress in the general population (Taylor et al., 2020). More specifically, such deleterious, chronic stress during COVID-19 has been linked to anxiety reactions in both the general (Xiong et al., 2020) and patient population (Dozois, 2020; Fu et al., 2021; Hawes et al., 2021; Smith et al., 2020). Concerns regarding overall health or specific physical symptomatology is commonly referred to as Health Anxiety,and is a major component of the biopsychosocial model of clinical health psychology (see chapters in Andrasik et al., 2015). Indeed, clinicians have expressed research interest in this specific type of anxiety in recent decades (Asmundson et al., 2010; Kosic et al., 2020). While vigilance to symptomatology can reflect concerns over threats to health and well-being, excessive levels of anxiety in response to potential disease can be counterproductive and lead to chronic stress and dysfunctional coping (Folkman & Moskowitz, 2004; Taylor & Asmundson, 2004).

Thus, from a conceptual framework, Health Anxiety has been viewed as the fear, apprehension, and avoidance behaviors due to the potential of threat to physical health or well-being. Researchers have argued that Health Anxiety largely stems from dysfunctional beliefs and cognitive over-sensitivities (Bardeen & Fergus, 2020; Fergus, 2014; Olatunji et al., 2009; Salkovskis et al., 2002).Yet many clinicians are challenged regarding which measures/tests best encompass or evaluate Health Anxiety states or symptomatology. Indeed, this issue is most pertinent in the current context of COVID-19.

To that end, I performed an online search of PsycINFO on the keyword term 'Health Anxiety' (on March 10, 2021). A total of 798 references (i.e., journal articles) were identified, where this term was noted in the Abstract of articles. The Tab-down option listed the most frequently noted tests/measures mentioned in Abstracts. Table 1 presents, in rank order, the listing of the tests/measures most relied upon by researchers in studies related to the topic of Health Anxiety. Several of these measures have remained popular in mental health practice and research over the past 3 decades (Piotrowski 1999, 2018; Piotrowski & Gallant, 2009; Piotrowski & Lubin, 1990).

Table 1. Key Tests/Measures on Health Anxiety Used by Researchers

Measure	Conceptualization	# of Articles in PsycINFO (3-10-2021)
Short Health Anxiety Inventory	Brief version of HAI; 18 items; 2 factors (likelihood of becoming ill and awfulness of the illness).	121

Whiteley Index	14 items; dichotomous yes/no format; published in 1967.	67
Hospital Anxiety & Depression Scale	14 items (7 anxiety; 7 depression); although a 4-factor structure has been reported; assesses psychological distress.	57
Health Anxiety Inventory (HAI)	64 items; self-report; differentiates anxiety disorders vs. controls; published in 2002.	51
Beck Anxiety Inventory	21 self-report items; severity of 'state' anxiety.	49
Patient Health Questionnaire-9	Used mostly in rapid assessment of severity in depression symptomatology.	35
Health Anxiety Questionnaire	21 items; 4 subscales (worry over health, fear of illness/death, reassurance-seeking behaviors, interference with life); published in 1996.	34
Anxiety Sensitivity Index-3	18 items reflect multidimensional conceptualization; 4 factors (fear of anxiety symptoms, physical worries, fear ofloss of cognitive control, fear of publicly observable symptoms); published in 2007.	33
Multidimensional Inventory of Hypochondriacal Traits	31 items on 5-point Likert format; 4 domains (cognitive, behavioral, perceptual, affective) reflect degree of health anxiety; published in 2005.	30
Anxiety Sensitivity Index	16 items; focus on body functionality and vigilance; predicts panic attacks, PTSD, and phobias.	28

In addition, based on the scholarly literature in this area, I note several adjunctive measures/tests commonly used, as part of the methodology, in studies on the subject of Health Anxiety. These assessment instruments are noted in Table 2. In conclusion, these bibliometric findings should fortify the assessment tool-kit of mental health professionals (and researchers) when engaged in the clinical evaluation of patients presenting with Health Anxiety issues, particularly in the era of the COVID-19 pandemic.

Table 2. Supplemental Measures

Health Cognition Questionnaire	Impact of Event Scale
Illness Perception Questionnaire	SF-36
Mega-Cognition about Health Anxiety	Illness Perception Questionnaire
Multidimensional Health Locus of Control	Penn State Worry Questionnaire
Millon Behavioral Health Inventory	State-Trait Anxiety Inventory

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Some Comments on the Importance of Comparative Group Data for Interpreting Rorschach Findings

Carl B. Gacono & Jason M. Smith

The Rorschach (RIM) provides information beyond what one gathers from self-report measures. In addition to CS data, psychoanalytic theory has led to several valid and reliable supplemental Rorschach scoring systems. When integrated, CS and supplemental RIM data increases the conceptual understanding of a patient or group, allowing for highly nuanced insights into personality functioning. In order to interpret Rorschach data one must understand that, for the most part 1) Rorschach variables measure traits (dimensions) not diagnosis (categories), that 2) the degree of pathology or health represented by a variable is determined in relationship to comparative group data, such as non-patients, and assessed within the context of the entire protocol or protocols (for group data), and, 3), confirming the presence or absence of a trait within a given sample necessitates a comparison to other relevant groups both those that contain threshold quantities of the identified trait, and those "absence" the trait. Throughout this article we underscore the essential contribution of a nomothetic context (using comparative CS data) for anchoring Rorschach interpretation.

Introduction:

The Rorschach is a perceptual-associative-judgmental task that partially bypasses volitional controls, yielding both structural and psychodynamic data, some of which is projected material (Bornstein &Masling, 2005; Exner, 2003). Rorschach data adds incrementally to, and provides data well beyond, what can be obtained with self-report measures (Bornstein &Masling, 2005; Gacono & Evans, 2008; Gacono & Meloy, 1994; Smith, Gacono, & Cunliffe, 2021). The Comprehensive System (CS) has an extensive research base, more than adequate normative, clinical, and forensic comparative data[i] (Exner, 2001, 2003, 2007; Gacono & Evans, 2008; Smith et al., 2021), and has been widely used in clinical and forensic practice, meeting the standards of admissibility and acceptance in court (Gacono et al., 2008; McCann & Evans, 2008; Meloy, 2008; Piotrowski, 1996a, 1996b, 2007, 2017).

Rorschach scoring begins with coding the Comprehensive System variables (CS, Exner, 2003) and generating a sequence of scores and structural summary. The experienced Rorschach user can complete most if not all the actual coding during the two phases (free association & inquiry) of administration. Interpretation begins in earnest by comparing the CS coding, indices, and constellations to relevant comparative group data. For example, how does this "depressed" patient compare to inpatient depressives on relevant variables such as DEPI? To non-patients? This dual comparison (clinical group--non-patient group) anchors one's hypothesis

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concerning both the nature and position of the patient's self-reported depression.

In addition to CS generated data, psychoanalytic theory has provided a foundation for several other Rorschach supplemental reliable and valid scoring systems. These include systems for object relations (Blatt & Lerner, 1983; Kwawer, 1980), defenses (Cooper, Perry, &Arnow, 1988; Lerner & Lerner, 1980), developmental psychopathology (Urist, 1977), dependency (Bornstein &Masling, 2005; Masling et al., 1967), trauma (Armstrong & Loewenstein, 1990), aggressive drive derivatives (Gacono & Meloy, 1994; Gacono, Gacono, Meloy, &Baity, 2008), and thought organization (Athey, 1974; Meloy & Singer, 1991)[ii]. These additional systems provide a useful complement to CS scoring, allowing for the quantification of important Rorschach content, traits, and processes (Arnow&Reznikoff, 1976). Most of these systems, including their reliability and validity, have been summarized in five books (Bornstein &Masling, 2005; Kissen, 1986; Kwawer, Lerner, Lerner, & Sugarman, 1980; Lerner & Lerner, 1988; Lerner, 1991).

Access to CS structural data, CS sequence data, and other supplemental scores increases one's conceptual understanding of a patient or group and allows for nuanced insights into levels of personality functioning (unconscious, preconscious, conscious; Gacono & Evans, 2008; Gacono & Meloy, 1994; Gacono & Smith, 2021; Meloy, Acklin, Gacono, Murray, & Peterson, 1997; Stone &Dellis, 1960). While the Comprehensive System (Exner, 2003), alone, provides psychodynamic information concerning self-esteem regulation, affect management, defenses, object relations, and interpersonal functioning, these supplemental systems deepen our understanding of both individual and group personality (Gacono & Smith, in press).

A Nomothetic Context:

When considering the context for forming Rorschach research hypothesis or interpreting individual or group data, three points emerge. Point #1--, each disorder is inherently dimensional, comprised of a cluster of specific traits. When present in sufficient quantities the traits reach a threshold whereby, they constitute a category (syndrome or disorder). Several disorders may share overlapping traits; however, no disorder (category) is mistaken for the other. In this manner the old Gestalt principle applies: The whole is truly greater than the sum of its parts. Paranoid and compulsive personality disorders share similarities in their cognitive style (focus on details, Dd). Narcissistic and paranoid people evidence grandiosity and self-reference, histrionic and narcissistic people share a need for attention, and so on. The combination of characteristics in sufficient quantities meets a threshold that determines group inclusion (diagnosis or category). For the most part, Rorschach variables measure traits not disorders per se. A specific disorder only begins to emerge when a composite of Rorschach variables appear that are linked to associated traits.[iii]

Gacono, Meloy, and Bridges (2000, 2008) study of Rorschach reflection responses among sexual homicide perpetrators (SHPs), psychopaths (Ps), and non-violent pedophiles (PEDs), provides an example. Similar frequencies of individuals from

each group produced reflections. Reflection responses were not interpreted as a "sign" of a diagnostic category, (psychopathy), rather the authors correctly identified their presence as being consistent with elevated self-focus (a trait--self-focus or narcissism; also see Smith, Gacono, & Cunliffe, 2019). These findings were consistent with theory, as elevated self-focus is a trait associated with each of these syndromes.

Point #2--inferences made related to the pathological nature of a Rorschach variable (associated trait) must be considered relative to frequencies and mean numbers found in non-patients or other groups that either contain the same trait or are hypothesized to lack the trait (i.e., non-patients; lacking or low levels of the trait). The nature of the trait must also be assessed within the context of the entire Rorschach protocol. For example, in comparing reflection responses among male psychopaths (Mean [M] = 0.72, Frequency = 44% produced at least one), sexual homicide perpetrators (M = 1.11, 45%) and male nonviolent pedophiles (M = 1.23, 44%), Gacono et al. (2000, 2008) noted that each group produced significantly more than non-patients (M = 0.20, 12%; Exner, 2007). Early on, Exner discovered that reflections relate to self-focus (Exner, 2003). Consequently, the Gacono et al. (2000, 2008) findings support high levels of self-focus in these clinical groups. Non-patients would not be expected to, and do not, exhibit the same type of self-focus as measured by reflections. Similar patterns for relevant variables would be expected between an avoidant personality and a narcissistic one or an avoidant personality and non-patients. It should be noted that even with a variable considered to be generally "healthy" --FD (introspection)—its relative healthy (nature) can only be determined within the context of the entire protocol. An FD response produced with minus form and an accompanying ALOG special score in a protocol with reality testing and thinking problems, would not be interpreted as indicative of heathy introspection.

Point #3 -- involves how the clinician assigns a trait to a group. For example, in the Gacono et al. (2000, 2008) study about 50% of each group member produced at least one reflection. Did those without reflections lack pathological self-focus? Why don't 100% of the male psychopaths produce reflections? The answer to the first question is affirmatively NO. All the psychopaths (PCL-R $\geq$ 30) elevate on PCL-R Factor 1, which correlates with narcissism and reflections (in males). They are all not only self-focused but also pathologically narcissistic. The PCL-R assesses narcissism in a global and direct manner (observed attitude/behaviors), while the Rorschach scores and patterns do so indirectly, having the validity of variables been previously established through linking them to traits by demonstrating associated behavior(s). In the Gacono et al. study, other evidence in the history, PCL-R data, or other assessment information (i.e., MCMI-II) confirmed the self-focus demonstrated by the Rorschach for the three clinical groups. In the manner that the Rorschach can ferret out sub-groups within a given sample, the reflection response does not capture the pathological self-focus in all subjects, rather sub-groups will present their self-focus through the production of other indices and patterns (e.g., W:M, PER responses,

etc.). So, while not all male psychopaths produce reflections, all male psychopaths are pathologically narcissistic. In a related manner none of the non-violent PEDs met the criteria for ASPD or psychopathy. Reflections represent a trait, and do not provide a one-to-one sign for a category (reflections = self-focus, not psychopathy). It is scientifically sound to attribute self-focus to each of Gacono et al. (2000, 2008) three groups based on a comparison of reflections with the CS non-patients (12% produce at least 1).

Rorschach Interpretation:

Competent Rorschach interpretation requires examining scores and indices within a nomothetic context (comparative group data). **In confirming the presence or absence of a trait within a given sample, it is the comparison to other relevant groups, both those that contain the same trait, and those absent the trait, that aids this determination.** For example, in a recent article contrasting the differing personality styles of male (MP) and female (FP) psychopaths, Rorschach CS and supplemental coding related to malignant hysteria were found to discriminate between the groups (Gacono & Smith, in press). While the MPs had less indices of affect, both groups were found to be emotionally explosive (Pure C, MP, M = 0.70; FP, M = 1.07; NP, M = 0.17; CD, M = 0.47). Three variables (AB, Hx, & IMP [Impressionistic response], Gacono, 1988), representing the core of the hysterical, impressionistic style (Shapiro, 1965), along with a constellation of hysterical defenses, differentiated between the groups. The FPs also produced AB and Hx in greater quantities than non-patients (Hx, FP = 39%, NP = 10%; AB, FP = 44%; NP = 15%) supporting the "malignant aspect" of the hysteria.

The need for adequate nomothetic data is one of several reasons that the CS is considered the only validated primary system for Rorschach coding and interpretation. The development of newer alternate systems, such as the R-PAS (Meyer, Viglione, Mihura, Erard, &Erdberg, 2011) must have similar data acquired with their respective administration instructions prior to being considered appropriate for applied use. The supplemental systems offered in this article have also been found to be useful related to their validity findings but would benefit from additional comparative group data. Dr. Smith and I are attempting to create forensic comparative samples of these scores by coding them in the over 2000 forensic protocols from our archives (Gacono & Evans, 2008; Smith, Gacono, & Cunliffe, 2021). We welcome any collaborators.

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[i] Rorschach Workbooks for the CS (4th & 5th edition; Exner, 1995, 2001) included descriptive CS data for non-patient adults (N=600-700; also listed by high Lambda, introversive, extratensives, and ambitents), non-patient children and adolescents (N = 1390; also listed by age), adult outpatients (N=535), inpatient schizophrenics (N = 320), inpatient depressives (N = 315), and character disorders (N = 180). A new sample of 450 non-patients is also available (Exner, 2007). Descriptive group data is also available for over 2061 CS administered forensic protocols (Gacono & Evans, 2008; Gacono & Meloy, 1994; Gacono & Smith, 2021; Smith, Gacono, & Cunliffe, 2021).

[ii] See also Borstein and Masling's (2005) *Scoring the Rorschach: Seven Validated Systems*. While validated these systems have relatively little comparative data as compared to the CS. Due to their extensive usage in forensic samples, the Gacono and Meloy (1994) Extended Aggression scores may be an exception.

[iii] Rorschach data are useful in sorting out sub-groups within any classification. As noted in psychopathy, every personality style and/or disorder also contains some amount of heterogeneity; with potentially identifiable subgroups (Neumann et al., 2016).

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The Case for Projective Measures in Bariatric Psychological Evaluations: A Review of the Scientific Literature

Chris Piotrowski

Bariatric psychological evaluation, over the past 20 years, has emerged as a clinical specialty, and recommended revisions to the standard assessment protocol have been recently published (Rutledge et al., 2020). Yet despite reliance on a host of clinical assessment measures across several mental health domains, projective techniques are rather shunned by professionals in this specialty area. Based on an extensive review of the extant literature, this article: a) provides supporting evidence that based on a myriad of clinical features central to the evaluation of bariatric surgery candidates (i.e., body image, self-esteem, self-representation, motivation, emotion regulation, interpersonal functioning, psychopathology), projective tests are ideally suited to tap these psychological domains; b) cites studies that make the case for the utility of projective assessment in the treatment of eating disorders, and for bariatrics specifically; and c) presents key findings, based on clinical data derived from projective tests, on studies of bariatric patients. Overall, this review supports the clinical utility of projective measures (i.e., the Draw-A-Person test, the Baum Test, Rorschach, Thematic Apperception Test, Sentence Completion tests, Somatic Inkblot Series), as part of a comprehensive evaluation of both candidates and patients facing bariatric surgery, in addition to assessment of post-surgery outcomes. Interestingly, the vast majority of the studies cited in this review were conducted by researchers outside the U.S.A., mainly Europe and Japan. Perhaps, the disuse of projective techniques by clinicians is more an artifact on lack of professional training in these methods (see Piotrowski, 2015), as opposed to the lack of applied utility of these assessment measures per se.

Introduction:

Psychological evaluation, both in pre and post bariatric surgery, is a burgeoning clinical specialty (Marek et al., 2016; Mitchell & de Zwaan, 2012). Indeed, a recent text on assessment in clinical health psychology devotes a key chapter on psychological evaluation of bariatric surgery candidates (Andrasik et al., 2015, pp. 405-426). This chapter outlines the critical assessment domains involved in bariatric evaluations (i.e, eating behaviors/attitudes, health maintenance, substance abuse, and personality/psychopathology). Moreover, the authors provide a rather extensive list of mental health tests/measures in support of tapping these clinical domains (e.g., AUDIT, Olbrisch Bariatric Eating Scale, Eating Disorders Examination, Millon Behavioral Health Inventory, MMPI-2, Personality Assessment Inventory, SCL-90, Beck Depression Scale). Recently, Rutledge et al. (2020) published a 'revised' model for improved clinical and research utility in bariatric evaluations. This applied framework includes the use of a myriad of assessment tools such as the AUDIT, SF-6,

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the Millon Behavioral Medicine Diagnostic, Pittsburgh Sleep Quality Index, and the Beck Depression Inventory II. Interestingly, neither of these highly visible references in the bariatric surgery field mention the potential for the application of projective techniques in the mental health assessment of patients. Moreover, in a recent review of prominent measures used in research on eating disorders, projective methods were found to be rarely emphasized (see Piotrowski, 2018), nor highly regarded by health psychologists (Piotrowski & Lubin, 1990).

The current study a) outlines the inherent clinical utility of projective measures for comprehensive bariatric evaluations, and b) presents findings from key studies in the psychological literature that lend support for the application of select projective techniques related to eating disorders in general and to bariatric assessment specifically.

Rationale on Use of Projective Methods in Bariatrics

From a conceptual standpoint, the lack of application of projective techniques in evaluation for bariatric surgery and patient outcomes is rather surprising given the clinical focus on obese individuals regarding body image, low self-esteem, distorted self-concept, and feelings of inferiority or inadequacy (Aguera et al., 2015; Calisir et al., 2020; Cella et al., 2019; Claudon et al., 2012; Hecht, 2020; Kamitani, 1995; Karcher & Cherikh, 2015; Muller-Pinget et al., 2019; Yusufov et al., 2017), in addition to propensity for personality disorders and related mental health diagnoses noted in these patients (see Marek et al., 2016; Oltmanns et al., 2020). Thus, assessment for psychopathology is critical.

Indeed, drawing techniques such as the Draw-A-Person (DAP) task, the Baum Test, and House-Tree-Person (H-T-P) seem ideal tools that assess an individual's self-representation, physical appearance, body image, and psychic life (Mizuta et al., 2002). Also, Sentence Completion measures can be effective in revealing latent aspects of an individual's psychic life (Koga et al., 1992; Piotrowski, 2018). The projective nature of these techniques can reflect both conscious and unconscious views of oneself. Moreover, pre-post-surgery comparisons on these measures can provide valuable clinical insights on not only self-image and idealized self-concept, but also potential changes in self-perception, 'body space', and psychological health over time (Kindes 2006; Kubik et al., 2013; Wimmelmann et al., 2014).

Thematic tests such as the Thematic Apperception Test (TAT) can provide rich clinical material regarding the nature of interpersonal relationships, motivations, quality-of-life, and dealing with emotion and stress. These issues are central to the adaptation and 're-orientation' of bariatric patients, post-surgery (Hachem & Brennan, 2016; Hsu et al., 1998; Marsden et al., 1999). Moreover, instruments such as the Kinetic-Family-Drawings (KFDs) could shed some light on life-long critical relationships in the lives of these patients.

Finally, the Rorschach seems ideal to tap on issues like ego-strength, dealing with reality, self-image, social interaction, and the emotional life of bariatric patients; in fact, several studies,

investigating eating disorder, have found support for the clinical utility of the Rorschach in bariatric samples (La Gruta et al., 2018; Marsden et al., 1999).

Hypothetical Examples

I offer several potential areas of clinical application on the use of projective measures in bariatric evaluations: prior to surgery, the clinician could ask the bariatric candidate to offer 2 separate drawings (as they see themselves prior to surgery, and as they perceive themselves post-surgery). The key clinical signs/features would be comparative overall size of figures, placement of figures on sheet, and perhaps facial features such as the size of the eyes or smile. Indicators on the 2nd drawing, such as larger figure and larger eyes may reflect the patient's expected increase in self-esteem, positive self-perception, and positive outlook on life.

TAT, KFDs, and Rorschach analyses, pre vs. post-surgery, could furnish key data on interpersonal relationships, emotional life, and motivational levels. Clinical data obtained on Sentence Completion measures could provide insights on all the issues noted above, in addition on the patient's view and/or acceptance of their obesity. Finally, the Somatic Inkblot Series could serve as a prognostic indicator regarding the overall bariatric psychological evaluation (Brady, 1995; Dubey et al., 2018; Kumar, 2015).

Review of the Literature

Research in Japan

Interestingly, over the past 30 years, much scholarly work on the use of projective techniques, in the study of eating disorders, has been conducted by Japanese investigators (see Kubo et al., 1997; Koga et al., 1992; Kamitani, 1995). Perhaps, one reason for this is that the Baum Test (i.e., Tree Drawing Test) has been shown to be the most popular clinical assessment measure reported by practicing Japanese psychologists (Ogawa et al., 2010; Piotrowski et al., 1993). In fact, Mizuta et al. (2002) utilized the Baum Test and a Sentence Completion test (SCT) in the study of subtypes of eating disorders in a sample of female patients. The findings showed that the 'purging' type of disorder patients drew smaller trees (skewed to the left side of drawing paper), and provided more negative (versus positive) responses on the SCT. Also, Ishii et al. (1994) applied Rorschach testing in the assessment of defense mechanisms in a sample of obese Japanese adolescents and adults.

Table 1. Research Studies Using Projective Tests in the Study of Eating Disorders/Bariatric Surgery

Study	Methodology	Major Findings
La Grutta et al. (2018)	Determined psychological profile of 10 obese women in Italy; Rorschach method	Results showed difficulty in managing daily responsibilities, rigid control of emotions, sense of inadequacy, and affective turmoil; Authors contend that the Rorschach captures the psychic suffering of the obese person, an

		image of the self-concept, and emotional life.
Schwailbold & Cuynet (2015)	Investigated psychological dynamics of obese family members; utilized 'House' drawings to assess projective 'spatiography'	Authors claim that such drawings illustrate the unconscious image of family dynamics.
**Venzon & Alchieri (2014)	Studied binge eating post-bariatric surgery; 40 patients, comparing those above vs. under 50% initial weight; Binge Eating Scale and Rorschach scores	The binge eating group expressed impulsivity and difficulty in perceptual integration
Schlitz & Brytek-Matera (2013)	Compared binge eating across 3 groups (N=46; obese, anorexic, bulimic); used Rotter's Incomplete Sentences Blank	Findings indicated that the obese group had difficulties expressing negative feelings; the main clinical issues were interpersonal acceptance and deep-rooted shame.
**Claudon et al. (2012)	Studied 43 pre-surgery severely obese candidates on self-presentation and imagery of one's body space; assessed anxiety & depression levels; Dutch Eating Behavior Questionnaire; Hospital Anxiety & Depression Scale; body image views via Rorschach protocol	On the Rorschach, 'somato conflicts' and body image concerns were evident; negative bariatric outcomes were linked to lack of positive psychological self-view; authors suggest the pre-surgery evaluations of somato-psychic conflict is a strong marker for bariatric surgery denial.
Sanahuja et al. (2012)	Used a novel approach in the treatment of obesity in adolescent girls, via meditation with a focus on representation of body image; Rorschach method	This procedure and intervention proved successful by re-defining a more lucid image of the body for this teen sample.
**De Almeida Ribeiro et al. (2011)	Investigated psychological profile of 16 women, pre & post bariatric surgery (3 - 7 months); the Rorschach test was the sole measure used	Based on the Rorschach data, anxiety levels decreased post-surgery, due to the implementation of defense mechanisms; Also, the patients showed gains in psychic maturity reflected in use of cognitive resources.
Daini (2009)	Examined self-evaluation in the study of eating disorders via projective methods	For males, issues about gender identification was paramount; Thematic tests highlighted clinical concerns regarding self-concept.
Gueniche et al. (2008)	Authors' premise is the latency-age girls views of their parents plays a key role in psychic function and can lead to child obesity; N=10; Rorschach, TAT, and Coopersmith Self-Esteem Inventory were used	The main clinical issues identified were: narcissistic fragileness, depression, and separation-individuation dynamics.
Mitchell (2006)	Studied the unique characteristics of obese children; 41 male/54 female	Objective scales were weak indicators of identifying mental distress; the Drawing task

	obese participants in the Loma Linda University Fit Clinic; measured depression, self-concept, and used the 'Draw a Person in the Rain' task	showed promise as marker for psychic distress in this clinical sample; authors support the utility of projective techniques.
**Marsden et al. (1999)	Evaluated self-image in overly obese gastroplasty patients, via the Rorschach; 21 female, 9 male	Rorschach analysis showed that the majority of these bariatric patients a) had difficulty in handling emotions, b) avoided emotional engagement, c) exhibited low self-esteem, d) tended to be isolated socially; 10 months post-surgery, many of these patients maintained poor body image and self-disparagement.
Waysfeld et al. (1977)	Studied alexithymia in 56 obese females from a psychodynamic framework; used the MMPI and Rorschach	Findings showed that the psychosomatic patients were more prone to alexithymia versus those with neurotic characteristics.

Note. **References denote studies on Bariatric surgery samples.

Conclusion:

This study makes a vigorous argument for the clinical utility of projective tests in the bariatric surgery assessment model. This premise is supported by extensive research on the link between body image and overall self-concept in reference to positive outcomes regarding bariatric interventions (Castro et al., 2013; do Nascimento et al., 2013; Dube, 2008; Dykstra, 2013; Galvis-Aparicio et al., 2017; Geraci, 2016; Klassen et al., 2017; Lewinski, 2017; Rocha & Costa, 2012; Sarwer & Steffen, 2015; White, 2018). In fact, assessment of self-representation and 'somatic' perception are a classic clinical feature of most projective techniques (see Cassell & Dubey, 1996; Daini, 2009; Dubey, 2018; Porcelli, 2004) and, at the same time, a central focus of bariatric research (Bianciardi et al., 2019; Edward et al., 2018; Legenbauer et al., 2020; Peckmezian & Hay, 2017; Perdue & Neil, 2020; Perdue et al., 2018). This applies to bariatric studies involving obese adolescents as well (e.g., Jarvholm et al., 2012).

Undoubtedly, the implementation of projective measures into the bariatric evaluation protocol will be a challenge, considering the vast scholarly opposition to projective methods over the decades. Perhaps, by maintaining the visibility of projective techniques in graduate training programs (Piotrowski, 2015, 2017), these efficacious clinical tools may eventually be embraced by mental health professionals in the bariatric sub-specialty. The strong evidence, presented in this study, in support of projective techniques in this clinical area may contribute to that reality.

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Manual of Somatic Imagery Test (SIT-30 Image Online Test)

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The Somatic Imagery Test (SIT) is a "cloud based" semi-structured projective diagnostic instrument and an adjunct to psychotherapy. The SIT can be administered in an "individual" and "group" setting. The SIT is fully automated including reports, case management, billing etc. The SIT puts particular emphasis on content analysis, psychoanalytic interpretation, and symbolic interpretation while providing a quantitative analysis framework as well. The SIT helps therapists in "hearing" the "inner cry" that is not only hidden from others, but often hidden from one's own conscious awareness as well (Cassell & Dubey, 1990, Dubey et al, 2019).

What is the Somatic Imagery Test?

The Somatic Imagery test (SIT) is a semi-structured, projective, diagnostic test and an adjunct to psychotherapy. The SITavailable at *www.dubayhealingcenter.com*, with 30 imageswas released for quick assessment, after 30 years of intense data collection on clinical, organizational, and normal groups. Researchers have reported **high reliability and validity** (Dubey et al, 2019) and papers published in the international journal, "SIS Journal of Projective Psychology and Mental Health"(somaticinkblots.com) clearly show the advantages of the SIT both in the "individual" as well as "group administration" settings.

The SIT automates the entire "psychological test life-cycle" including administration, interpretation, reporting and diagnostic collaboration. In addition to quantitative analysis, the SIT 30 facilitates and emphasizes content analysis, psychoanalytic interpretation, and symbolic interpretation via a database of research and case studies made available as "hints".

The technique is based on spontaneous, individually generated responses to semi-ambiguous figures, which elicit intrapsychic associations specific to the person presented with them. The SIT images evoke symbolism and meanings unique to the responding individual. The test responses (Total R, Human, Animal, Anatomical, Sex, Most Typical, Movement, Rejection and Pathological responses) can be differentiated from peer norms and clinical indices and can be analyzed according to internationally recognized psycho diagnostic criteria. The procedure is an adjunct to psychotherapy because responses can be further explored to create a more effective treatment plan, and can be re-addressed in later discussions, providing opportunities to elicit deeply defended material. During the administration of the SIT procedure, clients may abreact emotional conflict raised to consciousness by the images, which can be a therapeutic experience (Cassell and Dubey, 2003).

Expression stimulated by ambiguous or partially ambiguous imagery can be used in therapy to test insight and to help measure treatment

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progress. By developing a practiced eye and ear for such imagery, therapists can more directly share the perceptual world of their patients with less interference. The somatic Inkblots, therefore, are potentially more powerful than verbal interviews and tests (Cassell and Dubey, 2003; Dubay, et al,2019).

Most of what is included in the ambiguous structure relates to specific life situations and post-traumatic dream content that has been found to have clinical significance. Viewing the SIT has both diagnostic and therapeutic applications that are far reaching.

Theory of the Somatic Imagery Test:

The Somatic Imagery Test is backed by three theories known as Somatic Imagery Theory, Theory of Body Symbolism and Theory of Inner Cry. These have fulfilled the theoretical gap of the Rorschach test. The theories proposed have been illustrated (Cassell and Dubey, 2003, Dubey et al 2019) ahead:

1. Somatic Imagery Theory:

Somatic imagery theory proposes that everyone has a unique and highly personalized system of attitudes, both conscious and unconscious, that is projected onto the body concept as a special entity. These interact with external environmental feedback sources and internal sensations. Relatively discrete mental representations exist for specific somatic regions, which constantly compete for full registration in consciousness. Somatic awareness transiently increases in states of hunger, physical exertion, emotionalarousal, and sexual excitement. Subsequently, the mental representations in the body fade into the background of consciousness.

Alterations in body perception also occur in physical illness. In the diseased body, pathologic physiologic processes give rise to percepts from the diseased area, which directly or indirectly, influence awareness. The patient's sensitivity to these depends partially on the pre-existing body concept. Sensations that arise from regions of high priority in the body gestalt are more likely to register than those from more perceptually silent areas. If the sensations are subjectively considered aberrant, the individual must then cognitively evaluate their potential abnormal significance. At this stage, the medical patient experiencing somatic symptoms then makes a kind of lay "diagnosis." Intense pain or gross changes in body function are readily distinguished from normal body processes. However, other alterations such as early stages of disease formation pose problems for subjective interpretation.

The cognitive appraisal of the altered body state is influenced by factors such as age, sex, socioeconomic status, and past medical and family history of disease experience. There may be a strong motive, conscious or unconscious, to adopt a sick role to obtain disability compensation. There may also be a stress-induced wish to regress to an infantile, dependent position, and be taken care of by parental figures such as a spouse, grown children, physicians, nurses, or nursing home staff.

Interaction between these multiple mind-body (“psychosomatic”) determinants will influence

whether an individual decides to consult a physician to report subjective experiences. Such "symptoms" reported in the early stages of an initial visit represent verbal communication, containing localized reference to specific organ images within the body gestalt. Their cognitive content reflects altered anatomical awareness associated with the patient's belief that the given region has impaired function. Once professional consultation is obtained, the physician formulates a series of diagnostic hypotheses based on "presenting symptoms", on the nature of the underlying disease processes. Then a former structured medical interview is conducted, with questions designed to uncover the pathological significance of somatic symptom clues. In most instances, an insightful clinician will be in a relatively strong position to establish a working diagnosis upon completion of the history.

Clinical experience, upon which the Somatic Inkblot procedure builds, indicates that persons suffering from stress induced physical disturbances or (“hypochondriac “) conversion reactions, malingering etc. will report perceived abnormal anatomical structure on Somatic inkblots. There may be sensitization with anatomy (increase in number of anatomical responses) or repression with avoidance of somatic content. This clinical use of content analysis follows the interpretation principles described by Schafer (Schafer, 1954, 1960).

By assessing an individual's responses, and associations to them, much can be learned about the person's innermost thoughts and feelings. What is seen or imagined in semi-ambiguous inkblots reveals his deeper layer of self-perception. It has also been found helpful as an aide to enable professionals to empathize more sensitively with the suffering individual's "inner cry." Previously, their suffering was more likely hidden because of defensive mental mechanisms. Many existing techniques employed today are highly time consuming, not particularly cost-effective. Perhaps most important of all, they do not readily provide a transparent window into the inner world (Cassell and Dubey, 2003).

2. Theory of Body Symbolism:

Interest in the symbolic significance of the human body can be traced back to the very dawn of civilization (Wentinck, 1972). Indeed, ancient wall paintings and stone carvings evidence preoccupation with this subject. These distinguish Homo sapiens from less symbolically able species. Throughout history, pictorial representations of the body have been a central theme of artistic expression of humanity's search for identity. Philosophically, such representations are an attempt to integrate mental and physical phenomena rather than to isolate or reduce them, as in Cartesian mind-body dualism.

When someone projects onto an inkblot the response "sick stomach", it may indicate a concern or focus on that organ in one-self or another person. It also might indicate some association or deeper symbolization involving the stomach. An organic or functional disorder in that organ system is consistent with Rorschach's view that certain anatomy responses may be a projection of kinesthetic sensation in the musculature (Rorschach, 1951). Freud, and

later Alexander and French, described how gastrointestinal dysfunction or distress can be a manifestation of underlying psychological conflict which is below conscious awareness.

Projective techniques geared specifically to body imagery and organ function assesses both organic and functional disorders, real or imagined. Roy Schafer, a psychoanalyst, advocated a content analysis approach (Schafer 1954, 1960). The content analysis has been reviewed in Aronow and Reznikoff's book "Rorschach Content Interpretation" (1973).

Qualitative content analysis assesses the individual's imaginable mode of information processing. It taps the same inner perceptual field as dream imagery. This occurs on a continuum from pictorial recall to pictorial metaphor. Pictorial recall is visualized objective reality, rational and realistic. Pictorial metaphor is a complex concept which is highly individualized, consisting of subjective associations of past experiences, interpretation of present realities and future expectations along with their meaning. While "normal" perception matches reality, it is never 100% congruent with objective fact. An example is the relative unreliability of some eyewitness accounts. Memory and dreams are contaminated by personal cognitive and affective percepts. These dynamics often elude both structured interviews and a battery of standardized psychological tests. They are more readily understood through extensive symbolic analysis (Cassell & Dubey,2003).

3. The Inner Cry for Help:

Clinicians worldwide have heard the cry for help in a variety of ways. These range from abused children who escape stress through Dissociative Disorders to victims of catastrophe or war, who suffer from PTSD. Other manifestations include ongoing frustrations in their life situations. Some cry for help through their bodies, with Somato-form disorders. All these are diagnosable by DSM or ICD criteria through use of definition and symptom checklists. Underlying conflicts can also be manifested in subtle, more complex, and less dramatic ways. Physical symptoms, such as functional disorders, hypersensitivity of an organ system, or pain all in themselves may represent a form of a cry for help.

For physicians, therapists and researchers, the body, its organ systems, and its perceived functions are "doorways to the mind." By observing and assessing how people perceive or misperceive body and organ function, much can be learned about their innermost thoughts and feelings. What they see in ambiguous inkblots shows how they see themselves, the quality of their life and lifestyle, their adjustment to conflict, their coping skills, and their view of the reality of life.

The Somatic Inkblot images can help therapists more sensitively "hear" a suffering individual's cry for help, the "inner cry" that is not only hidden from others, but often, hidden from one's own conscious awareness as well. This is the "magic" the unique and distinguishing feature of projective testing. While the Somatic images use somatic inkblots that involve body and organ imagery, they have identified a variety of personal problems and mental disorders also. As

stated above, everyday conversations are replete with examples of the mind-body connection, such as "broken heart" for depression or grief; "eating at my gut", "pain in the neck," or "what a headache" are used for anger or frustration. By developing a practiced eye and ear for this imagery, therapists can more directly share the perceptual world of their patients with less interference, and fewer variables than in structured interviews or so-called "paper and pencil tests". Therapists willing to more personally know and experience the patient's psychic pain will be rewarded with clearer understanding of the psychodynamics involved, and therefore be able to plan effective therapeutic intervention.

Reliability and Validity:

Extensive work was done to establish the reliability and validity of the SIT Test. The correlation for the content categories over a period of four weeks, on repeat testing was found to be in the range of .69 to .88. Inter-scorer reliability for the indices was scored separately by a trained and experienced clinical psychologist, having experience with the Somatic images, and by a fresh psychologist who was provided with a set of definitions for the variables such as: Total number of Responses: Human responses, Animal responses, Anatomical responses, Sex responses, Movement responses, Most Typical responses and Rejection of images. It was discovered that there was no difference between their two independent scorings.

"The validity of a psychological test is an essential characteristic that must be demonstrated beyond any doubt. Its validity can be based on theoretical assumptions, clinical experiences, and its utility in the field. The division of tests into objective and projective requires different standards for measuring validity. The projective tests, such as the SIS, cannot be tested for validity, like objective tests. The SIS is a method of observation and appraisal. With regards to a test that measures some aspects of personality, it is legitimate to ask, "Is it valid?" However, regarding a method of observation, the appropriate questions are: "Is it useful?", "Is it productive?", and "Does it conform to some construct?"

The SIT is an objective procedure for observation; therefore, validity in psychometric terms cannot be determined. The question then arises; can we still call it a valid procedure? The clinical interview and the diagnostic procedures are based on the information elicited from the patient/client and his observations. Has anyone doubted the validity of such clinical interviews and diagnostic procedures? If not, the validity of the projective test, the SIT, must be recognized since its utility would appear to be established at a clinical case history level. It is, therefore, necessary to demonstrate empirically the content and construct validity of the SIT. The other types of validity generally given in textbooks cannot be determined (Cassell and Dubey, 2009b)".

The content validity of the test can be demonstrated if the patient/client suffering from focal somatic symptoms project altered patterns of anatomical responses. In several studies, it has been found that relationships exist between an individual's physical disturbances and his/her

projected anatomical responses (Cassell, 1969, 1971, 1972, 1977, 1980, 1990; Dubey and Cassell, 1993). In a study on heart patients in India, results suggested that the somatic preoccupation was not verbalized any more than compared with a healthy control. It was interpreted that the body disturbances were consciously denied (Goel et. al, 1990).

To have construct validity based on existing literature on inkblot technique, it can be assumed that Most Typical responses and Atypical responses must be different in broad psychiatric diagnostic categories compared to healthy controls. This hypothesis was tested on Neurotics, Schizophrenics, and healthy Normal subjects. The Atypical responses were found to be significantly higher in Psychotics than Neurotics and Normal. Likewise, Most Typical responses were significantly higher in normal subjects compared to psychiatric patients (Cassell and Dubey, 2003, Dubey and Cassell, 1993). Several researchers have found the SIS test as a reliable and valid instrument (Kaur and Verma, 1998, Nicolini, 2002: Pershad& Dubey, 1994; Singh & Banerjee, 1996; Verma & Kaur, 1999).

Rathee et. al. (1998) administeredSomatic Inkblot Test and Rorschach on 200 psycho-pathological cases of Armed Forces to find out its diagnostic validity. Results revealed that out of 10 common indices of both tests, five variables in schizophrenia, four in affective psychosis, seven in unspecified psychosis, five in Anxiety, four in Depression and seven in Hysteria, showed high and positive correlations. The findings indicate the high diagnostic validity of SIT indices against those of Rorschach's among six psycho-pathological groups of armed forces.

Cassell and Dubey (2009) presented two previously unpublished early statistical studies on SIS content validity. The first was completed in 1978 with the Somatic card form. It used a content analysis scoring system to quantify projective responses in a group of 13 women suffering from Premenstrual Dysphoric Syndrome (PMDD). As compared to a control group of 37 women these subjects projected significantly more responses depicting reproductive and sexual symbols. Based upon chi-squared analysis, statistically significant differences were found for such sex related anatomical responses, but not for unrelated body parts such as heart and lungs. The second study was completed in 1988 with the SIT Booklet Version. The data were analyzed for 37 of the 62 images. In the comparison 28 pregnant women were compared with 27 non-pregnant controls. A Chi square analysis revealed that pregnant women projected more responses related to reproduction and/or pregnancy.

Kumar (2009) studied the factor structure of SIS-I quantitative indices on 100 normal adults. Principal Component Analysis identified four components with Eigen value greater than one. However, only three components were rotated subsequently as only one index loaded significantly on the fourth factor. The first factor loaded significantly on Typical, Most Typical (positive) and Atypical responses and was labeled as ‘objective thinking’. The second factor loaded positively on Movement, Human

and Anatomy responses and negatively on Animal responses and this factor was labeled as 'emotional maturity'. The third factor loaded significantly on Total Number of Responses (positive loading) and Rejection of Images (negative loading) was labeled as 'reaction to stress'.

Cassell and Dubey (2010) pointed out that some psychologists question the validity of projective tests as they do with Questionnaires. They forget that the projective tests cannot be verified on the same parameters as questionnaires. We put our perception and feelings into the mind of the subject by asking them to choose their answers as "Yes" or "No", "True" or "False" "Agree" or "Disagree" etc. The true validity of a test should be decided "if it measures for what it was made". An Inkblot test is a powerful instrument. It brings unprocessed symbolic material through projection which cannot be measured /assessed through so called objective questionnaires.

Procedure and Instructions:

The SIT is designed for **self-administration** after supervised instruction. The test is also used as a group administered test. The subject will write the responses on the space provided. Please read the **instructions:**

*"**Most people find this test fun and interesting. First, please relax, and prepare to enjoy. Please write each in terms of what they resemble or look like to you. Different people see different things in the inkblots. It is important to write whatever the inkblot looks like to you. Please include everything you see even if it reminds you of something remote, vague, highly personal, or even potentially embarrassing. Please include everything you see with as much detail as possible. Also include any outstanding emotional reaction that you might feel in responding to these images".***

The test may take about 30 minutes to complete. The subject is asked to complete the identification data and the brief health history on the last page of the answer sheet. Please be assured that there are no right or wrong answers.

Mental health professionals with training and experience in projective techniques will have little difficulty integrating the scoring and interpretation. "Body Symbolism" (Cassell, 1980), "Interpreting inner world through Somatic Imagery" (Cassell and Dubey, 2003 and "Inkblot Personality Test: Understanding the Unconscious Mind" (Dubey, et al, 2019) can be a resource for increasing one's skill in the interpretation of Somatic inkblot responses. Since the procedure conceptually taps into the same stream of imagery as seen in dreams, daytime fantasies and visual hallucinations, a background in the interpretation (interpreting) of such content, either in a direct or latent symbolic way, is helpful. Clinicians will find the SIT a useful aid, especially for people who cannot draw. In a sense, this procedure (employs) uses art as a diagnostic and therapeutic approach for those who cannot engage in traditional art procedures. Other clinicians with experience in dream interpretation, visualization techniques, guided imagery, active imagination therapies and hypnotherapy will also readily adapt to this procedure.

There are variations in test-taking, with important clinical applications. People who have difficulty in completing the test and who do not respond to several SIT images may be exhibiting denial, avoidance, blocking or repression. Excessively detailed responses suggest obsessive-compulsive traits. Exaggerated verbal responses, while discussing inkblots least liked, suggest affect-laden content. This should be further explored for relevance and meaning to the individual. In some cases, repressed material can burst into conscious awareness, triggered by the semi ambiguous inkblots. The underlying dynamics of many somatic complaints become accessible with this technique.

Scoring of Responses on SIT:

The Somatic Imagery test has an amazingly simple scoring system. It is less complicated than existing inkblot tests since it emphasizes content analysis. The eleven categories found to be important in understanding and interpreting protocols have been described as follows:

1. Total Number of Responses (R):

The total number of responses is arrived at by counting all the responses given by the subject on the 30 images of the SIT. The Total number suggests imaginative capacity and functioning intelligence of the subject. Psychiatrically ill patients will have a poor imaginative capacity and poor functional intelligence.

2. Human Responses (H):

Human responses include the whole human body, or external parts of the human body like face, ear, nose, legs, etc. The category does not include mutilated forms of the whole body or parts of it, such as crushed human beings, broken legs or smashed faces. These mutilated responses are included in the Anatomical responses. The number of Human responses suggests the subject's projection of self, interpersonal relationship with other human beings. When responses are low, it might be indicative of a desire to be away from others and indicative of schizoid or social isolation tendencies.

3. Animal Responses (A):

Animal responses include living or dead animals such as wild and pet animals, reptiles, birds, and sea animals. This category also includes external parts of the animals such as wings, legs, claws, beak, etc., but it does not include mutilated parts of the whole animal such as crushed birds or animals, pulled out wings, etc. Whenever many animal responses are given, interpretation should be that the respondent is more comfortable with animals than people or psychologically immature.

4. Anatomical Responses (At):

Anatomical responses pertain to internal parts of living beings and their mutilated forms, both of humans and animals. These responses are consistently high in those who have a poor self-image, preoccupation with somatic symptoms in the region focused on.

5. Sex Responses (Sex):

Sex responses pertain to the internal or external reproductive system and to sensuous parts of the body. These responses include thighs, buttocks,

breasts, fallopian tubes, ovaries, etc. Heightened anxiety and pathology may be associated with either heightened projections or impaired recognition of embedded sexual structure. These may signify sexual anxiety and/or dysfunction.

6. Other responses:

The responses which do not fit into the content categories-Human, Animal, Anatomical and sex, are scored under "Other" Content. These responses include Art, Blood, Plants, Anthropology, Clothing, Clouds, Fire, Food, Geography, Household, Landscape, Nature, Science, X-Ray etc. Normally such responses are less than 10 percent in a normal protocol.

7. Movement Responses (M):

Movement responses indicate activity and kinesthetic motor impulses. Examples include "talking human being," "flying bird" or "running tiger." Dancing and joyful movement may reflect a positive mood and Low movement may indicate depression.

8. Most Typical Responses (MT):

Most Typical responses are those which are given by more than 75 percent of normal subjects on an image (Dubey and Cassell, 1993, Dubey, Banerjee and Dubey, 2019). The total numbers of such responses are limited to 15. A higher number of Most Typical responses are suggestive of coherent, logical thinking, and ability to keep up with the demands of society. It may also be interpreted as a measure of ego strength and team concept. The following is the list of Most Typical responses along with the images eliciting them:

Images Number	
5:	Apple/fruit
5:	Dancing lady
6:	Two human beings dancing / Two ladies dancing
7:	Ear
8:	Raised hand, hand asking help.
12	Kidney/lungs
17:	Breast
18:	Two faces man and woman
19:	Two faces Adult and young / Child
20:	Two persons seating and conversing
26:	Man sleeping or resting/ dreaming and soul leaving body
27:	Child/children
28:	Mother and child/ Mother holding/hugging the child
29:	Running man/boy
30:	Family-father, mother and two children

9a. Typical Responses (T):

Typical responses are those which are commonly seen by healthy people on an image.

9b. Atypical Responses (AT):
Atypical responses are those of poor quality and with vague percept, either in structure or verbalization. For example, if the viewer gives the response "flower" on image 12 it should be considered as atypical because this image should elicit body anatomy such as kidney/lungs. The number of Atypical responses is proportionate to the degree of psychological disturbance.

Below is a list of **Typical and Atypical responses** on each image:

Typical and Atypical Responses (30 Image Test):

Image 1.
Typical: Floral arrangement; people
Atypical: eye

Image 2.
Typical: Space needle; cross; tree
Atypical: Bleeding body part; female genitalia (libidinal cathexis in lesbian women)

Image 3.
Typical: Clown; happy person, mouth
Atypical: Heart.

Image 4.
Typical: Person and teddy bear
Atypical: Egg; two chromosomes.

Image 5.
Typical: Woman dancing; Eve and apple; Seductive woman; Apple (snakes in India)
Atypical: Male; pregnant woman; rivers and island.

Image 6.
Typical: Man and woman dancing; hearts; two men or two women dancing
Atypical: Two sets of lines; eyes; two ants; two animals

Image 7.
Typical: Ear, Embryo
Atypical: Internal body part

Image 8.
Typical: An upraised hand; a hand reaching for help; palm
Atypical: Attacking hand.

Image 9.
Typical: Two love birds; heart
Atypical: Two (starving) birds fighting for food; lungs; x-ray of chest; leaves

Image 10.
Typical: Chest; ribs; heart; lungs
Atypical: Ugly dog; monster looking out at you.

Image 11.
Typical: Heart; female genitalia; uterus; animal coming out of heart
Atypical: Creature from outer space; atomic bomb exploding.

Image 12.
Typical: Kidneys; lungs; thorax
Atypical: Weightlifter (back pain detail); a bush with a spear for roots; testicles.

Image 13.
Typical: Turtle; flying bird; babies on sides
Atypical: Stretched animal skin.

Image 14.
Typical: Spinal column

Atypical: Pots, pans, or plates stacked on each other.

Image 15.
Typical: Vagina
Atypical: Stained glass window; crucifix (substituting religious symbolism).

Image 16.
Typical: Fetus; embryo
Atypical: Face; reflecting repugnant emotion (pregnant woman unhappy with pregnancy)

Image 17.
Typical: Human female breast; baby sucking at breast; deer's head
Atypical: Female arm being injured.

Image 18.
Typical: Two human faces, man, and woman.
Atypical: Man and woman arguing; sad faces

Image 19.
Typical: Two human faces; adult and child
Atypical: Mummies; person threatening someone

Image 20.
Typical: Two seated human figures; people conversing
Atypical: Man and woman arguing.

Image 21.
Typical: Broken glass; paper airplanes; knives
Atypical: Knives to kill someone; suicidal or homicidal imagery

Image 22.
Typical: Heart; smoking
Atypical: Open female genitalia receptive to act; a dark hole.

Image 23.
Typical: Spinal cord; male genitalia.
Atypical: Sperm going through a tunnel; two people talking.

Image 24.
Typical: Cell; ovum; egg; sun, heart
Atypical: Broken heart (post-trauma response); egg being fertilized (pregnancy wish).

Image 25.
Typical: A gun; exploding cork; firecracker
Atypical: A gun shooting someone

Image 26.
Typical: Body resting; soul leaving body; dead person
Atypical: Blood spurting from chest; crime victim bleeding to death

Image 27.
Typical: Fetus; embryo; child
Atypical: Diseased fetus; dead baby

Image 28.
Typical: Mother and child
Atypical: Woman holding baby and running away; person in despair hugging, Jesus' comforting someone.

Image 29.
Typical: Running human figure; lame
Atypical: Human figure with one leg running in fear

Image 30.
Typical: A family of two adults and two children standing together; Father, Mother and two Children.
Atypical: A family disintegrating; four children, Mushrooms

10. Rejection of Images (Rej):

If the subject is unable to give any response on any of the 30 images, the image is considered as rejected. Verbalizations like spot or inkblot are not considered as a response and are scored as Rejections. To determine the percentage of Rejection of Responses, the total number of rejected images are divided by the total number of images and multiplied by 100. Rejection of images may show low intelligence, thought blockage from psychological inhibition or organic brain involvement.

11. Pathological Scales:

Four pathological scales have been used are as follows:

a. Pathological Anatomy Scale (PAS):

Subjects who have personal health concerns, or who are pathologically identified with the health of others, may project responses in which the body is seen as diseased. These responses are usually related to specific regions involved in the subject's body image and can be appraised by evaluating the qualitative nature of the somatic material projected. The anatomical imagery is like that described by De Vos (1952) in Rorschach responses involving "diseased anatomy." Body parts might be reported as red, inflamed, infected or cancerous. Organs may be sore, painful, or hurting. Passages may be blocked or obstructed. Bones may be out of place or broken. It is possible to assess pathologic anatomy by summing up all such responses. All these responses are scored under PAS. Individuals who project these responses should be further evaluated for either hypochondriacal or excessive concern about physical health. This material should be explored, clarified, and assessed in the detailed inquiry and follow-up interview, since the subject may still have unresolved anxiety about this alteration in body concept. The total number of such responses is counted to form a score for PAS.

b. Hostility and Aggression Scale (HAS):

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When a person perceives Human or Animals in aggression, fighting, or any kind of hostility and aggression reflected in the projective responses involving physical assault or body injury will be considered under HAS category. Responses such as aggression in a dormant state; a human or an animal that is seen as fierce, aggressive, or dangerous; a hostile attitude, may indicate mild aggression. However, Animals or Humans seen as angry or in aggressive struggle, verbal or physical aggression, murderous themes, can be considered as indicators of major HAS. A person with signs of major HAS must be treated with pharmacological aide and psychotherapy in an aggression clinic.

C) Depression Scale (D):

A depressed subject's emotional state can be viewed as either overt or covert. Subjects with overt feelings of depression readily admit them and are good reporters of their own mental state. They usually exhibit nonverbal behaviors, such as sighing, weeping, downcast eyes, etc., which are consistent with the experienced affect. Subjects in a state of masked depression often conceal or deny their feelings. Frequently, they are preoccupied with their bodies in a hypochondriacal manner, and project anatomical responses, which are likely to be pathological. A depressed mood can be assessed by inkblot responses with high morbid or depressive content. The severity of these thoughts and feelings can be assessed by a study of their frequency and content quality.

Responses such as a weeping person, a grief-stricken person, depressed mood, sad face, a heavy heart, a broken heart, or a heart with a

clamp on it, suicidal, hanging from roof, or a dead man may be considered as indication of Depression. More than 3 responses or even I suicidal/homicidal responses may be an indicator of Depressive feature.

D. Paranoia Scale (P):

A cardinal projective feature of paranoid ideation involves a heightened awareness of threatening faces that are "looking" at the individual. This may be experienced as an exaggerated sense of self-consciousness in social situations. An emphasis on the eyes" of people or animals staring faces or pointing index finger may indicate paranoid ideation/suspicious attitude. An emphasis on the eyes" of people or animals, staring faces may be present in anxiety-laden dreams, may also indicate paranoid /suspicious attitude. It may be clinically indicated in art therapy, with figure drawings emphasizing "eyes." The patient may have hallucinating images of such staring faces. The paranoid scale quantifies such responses. Responses of more than 2 indicate Paranoia. Less than 2 is normal.

Images assessing different areas:

Table 1. Images Assessing Different Areas

Area	**Images on SIT**
Interpersonal Relationship	6, 9,18,19, 20, 28, 30
Ego/Self Image	3,4, 5, 26, 27, 28, 29
Healthy Body Imagery	7, 8, 9, 10, 11, 12, 14, 22
Erotic Imagery	15, 23
Hostility / Aggression	21, 25
Insecurity	8, 16, 24
Thinking in Group Conformity (MT)	5, 5, 6, 7, 8, 12, 17,18, 19, 20, 26, 27, 28, 29, 30

The Test was administered to executives in different situations and as expected, the data revealed several higher mental functions. These were as follows: productivity, imaginative ability, controlled emotionality, good adjustment, and group conformity. Regarding leadership skills, their scores were elevated on team building. Regarding their personality profile, they gave a greater number of total Responses, Most Typical and Human responses. In contrast they scored low on Animal, Anatomical and Sex responses. The Rejection of images and Pathological responses were almost absent (Dubey, 2003). In another study Dubey et al (2001), administered the test to 90 executives of a private organization. The SIS profile reveals that they were supported by good ego strength, healthy interpersonal relationship, no erotic disturbances, controlled hostility, and aggression, high on team building concept, good human relationship, and keeping touch with reality.

The data of SIT is presented to illustrate using the SIT as a screening test during the selection procedure. The subjects, who did not reject any images, gave more than 75 percent Most Typical responses, more than 20 percent of Human responses, less than 15 percent of Animal and Anatomical responses and gave no pathological

responses, were recommended for inclusion regarding possible employment (Dubey and Dubey, 2012, Dubey, Banerjee and Dubey, 2019). However, there were other criteria for acceptance or elimination, and none were rejected solely based on psychological test performance.

Indices found successful are shown in Table 2.

Table 2
Hard Core SIS Indices of Executives

	Scores
Rejection of Images	Less Than 1 Percent
Most Typical Responses	More Than 75 Percent (10 and More)
Human Responses	More Than 30 Percent
Animal Responses	Less Than 15 Percent
Anatomical Responses	Less Than 15 Percent
Pathological Responses	Almost Absent (Less than 3 on each Scale)

Table 3
SIT Indices in Normal, Neurotics and Schizophrenics

Indices	**Normal** **n = 300**	**Neurotic** **n = 100**	**Schizophrenics** **n = 100**
Total Responses	>30	<29	<30
Most Typical Responses	>11	<10	<6
Typical Response	>50%	35-50%	<30%
Human Content	20-30%	>20%	>25% With Poor Form
Animal content	<15-20%	>20%	>20%
Anatomical Content	<15%	>15%	>15%
Sex Content	About 6%	About 4%	About 6%
Movement	>6	<5	<5
Rejection of Images	0	>5	>4
Pathological Responses (PAS, HAS, D, P)	<6	More of HAS & Depression	More of P (Paranoid)& PAS

Overall Clinical Considerations:

Attention should be given to signs of somatic repression. This is reflected when images with high anatomical structure are left blank or when symbolic responses are projected, disguising the somatic content. An example is “rejection” on image 14, suggestive of spinal cord. Another would be seeing a bush instead of kidneys or lungs on image 12. Individuals suffering from psychogenic pain in a conversion disorder are examples of this group of respondents. In the detailed inquiry, depending on the clinical indications, specific questions may be asked to explore certain areas pertaining to the patient. What may at first seem an abnormal image pattern may prove to be a normal response after detailed inquiry? The response may be a defense against painful reality, a temporarily focused but generalized anxiety or an acquired or learned response from family, job, school, life experience or long-term, chronic medical problems. The therapist should withhold judgment and not share it with the patient until the dynamics are clear. In classical analytic therapy, this delay is intentional and is an integral part of the treatment plan. The therapist waits until the patient has the insight, awareness, and coping skills, and thus is ready to understand and process these new leanings. A subject's therapeutic readiness involves the ability to process affect-laden, repressed material, and unrealistic expectations of him/herself and others. Choosing this moment of truth, i.e., the time to share judgment is a test of the therapist's knowledge, understanding and judgment (Cassell & Dubey, 2003).

Another line of psychotherapeutic line of inquiry concerning the determinants of responses involves determining if the subject's projected material reflects inner psychological experiences not directly recorded from past visual experience. These responses may relate to nighttime dreams, daytime fantasies, or, in psychotic individuals, visual hallucinations. The test images are like images used in art therapy, in that they enable the individual to see them as an expression of externalization of the self, or the self as perceived by others. For example, there can be a perceived fusion between a child, or the self as child, and an abusive or controlling parent or authority figure. If a subject does not perceive an anatomical structure on an image, which generally elicits one (see Typical responses), it may be interpreted that the patient is denying physical discomfort and has low awareness. He might be having deep-rooted problems with that part of the body or organ.

Emphasis or avoidance of a structure may suggest conflict in that area. Emphasis on eyes, ears, or hair may suggest paranoid ideation. A higher conformity to Most Typical responses may suggest that the patient or client have group conformity in his/her thought process. High scores on the four Pathological Scales may suggest pathology in the respective area. The greater the percentage of atypical responses with poor quality, may indicate deeper pathology.

Rejection of Images:

It is equally important to understand why a person is unable to perceive an image. Each image is created to depict a certain percept; hence rejection of such images has a lot of clinical significance. Since these inkblots are highly structured - in the absence of any organic pathology- inability to perceive a blot can be highly clinically significant. It may help in understanding his reactions to different situations presented through inkblot imagery. The avoidance of such images may further be probed to understand the unconscious process. Though responses to different images are quite relevant to understand the personality of the subject, the rejection of images may be equally relevant and may help in peeping through the inner self of the subject. Because of such

relevance, rejection of images has been given much importance while interpreting protocol of a subject (Cassell & Dubey,2003).

When a person is unable to perceive images in a concrete form, it can be taken as rejection. It has been noticed that people reject images, which depict certain precepts related to their traumatized experience or underlying painful memory. For example, a person having poor interpersonal relationships may reject image 6,13, 18, 19, 20,28 and 30 of SIT because these images project human content. Poor interpersonal relationship with spouse may also lead to rejection of image 17, because the image project more of erotic content. Similarly, it has been noticed on clinical samples of cardiac cases that persons suffering from heart problems reject images depicting a heart 22 and 24 on SIT test. A few patients who have recovered and have accepted their clinical problems bravely do perceive 'a heart' on these images. It suggests that they have accepted their problems and have been counseled properly. Persons suffering from body ailments, for example kidney problems generally reject image 12 which depict kidneys. It has also been noticed that females traumatized sexually find it difficult to perceive image 14 and 23, which generally project the spinal column and male phallic organ. Since these persons have undergone traumatizing experiences and have unpleasant memories of the precept, they may find it difficult to see anything on these images. Even if they perceive something, often they give poor quality responses and attach a special meaning to it. For example, a patient who experienced an unpleasant sexual harassment perceived “A deadly android more like a creepy insect" on image 14.

It should be kept in mind that the material projected, needs to be assimilated by the experienced clinician with the overall medical and psychiatric history data. Even certain contents from dreams and visual hallucinations may be included while interpreting the protocol.

Interpretation:

Clinical/Symbolic interpretation of REJECTION of Images:

Image 1.

Typical Response: Floral arrangement; and two or three persons is a common response on this image.

Rejection: of this image indicates anxiety and color shock.

Image 2.

Typical Response: Flower is the common response on this image. People also see CROSS which indicates that the person is seeking spiritual support to control the adverse situation she/he is facing. Often such spiritual symbols help the client as support from spiritual power. It also saves ego from breakdown particularly in cases of depression and maladjustment. Perceiving an uprooted flower may indicate childhood separation, maternal deprivation and craving for affectional need.

Rejection: of this image may indicate libidinal conflict.

Image 3.

Typical Response: Seeing heart is the sign of affection and good interpersonal relationship.

Rejection: of this image may indicate craving for affection and love.

Image 4.

Typical Response: Seeing teddy bear playing/enjoying on this image indicates happy childhood (before 6 years)

Rejection: of this image indicates parental deprivation (due to death of either parent, living away from parents, staying with grandparents or other relatives etc.) during childhood, particularly before 6 years.

Image 5.

Typical Response: Perceiving 1. Apple and 2. Dancing Lady is an exceptionally good response and a Most Typical response. It may indicate that the person has contact with reality, ego strength maintained, good interpersonal relationship and happy mood.

Rejection: If a female is unable to perceive a dancing lady, it may indicate that the happiness from her life has gone away. If a male has not perceived a "dancing lady" it indicates that the man has traumatic experience from a female. In either case it indicates poor interpersonal relationship with opposite sex. Rejection may also indicate psychotic features because the card has two Most Typical Responses, almost seen by 90 percent people internationally.

Image 6.

Typical Response: Two persons, (MT) male and female, or any two persons is a healthy response, suggests good interpersonal relationship. Two males kissing or two females kissing or enjoying might indicate Homosexuality.

Rejection: of this imagemay indicate poor interpersonal relationship with opposite sex.

Image 7.

Typical Response: Ear is Most typical and normal response. Even a fetus is also a normal response.

Rejection: Females suffered from abortion may reject this image.

Image 8.

Typical Response: Hand is normal response (MT).Hand raised and crying for help, someone asking help, hand coming out of fire may indicate a severe adverse situation with lots of problems and the client is feeling helpless. Such people share their problems after intervention.

Rejection: of this image may indicate lack of security and mistrust on others.

Image 9.

Typical Response: Two birds kissing / playing is the normal response indicates good interpersonal relationship. Normally couples having conflicting relationships may avoid or be unable to see birds kissing or making love.

Rejection: of this imagemay indicate frustrated love affairs and conflict in love relations.

Image 10.

Typical Response: Many anatomical responses on this and other images may indicate hypochondriasis and somatic anxiety. Cardiac patients often reject this image. Seeing heart is a sign of prognostic indicators in cardiac patients because he has accepted the illness and learned how to manage and live with it.

Rejection: of this image may indicate physical ailments such as Cardiac/liver problems with self or with some significant family members.

Image 11.

Typical Response: Heart is the common response on this image. Cardiac patients often reject this image. Seeing heart is a sign of prognostic indicators in cardiac patients because he has accepted the illness and learned how to manage and live with it.

Rejection: of this image may indicate Cardiac problems with self or with someone in the family or sexual conflict.

Image 12.

Typical Response: Kidney (MT) is the most common response on this image. Lungs are also seen by many Indians. Persons suffering from Kidney problems or having some significant family members suffering from kidney problems may avoid seeing Kidney. Seeing Kidney is a good sign of prognosis in Kidney patients because he has accepted the illness and learned how to manage and live with it.

Rejection: of this imagemay indicate kidney/heart problems with self or with some significant family members.

Image 13.

Typical Response: Batman/ flying bat and two childrenis a normaland healthy response. It indicates a good interpersonal relationship with parents/authority figures/ boss. The bat/flying bird/tortoise may represent authority/father figure. Persons with conflicting relations with father/authority may see only two babies or children in this image. Not perceiving two children/babies is a strong indication of conflict with the father.

Rejection: of this image may indicate poor interpersonal relationships with parents particularly during childhood. Often this is rejected when the father/ father figure is very authoritarian/strict.

Image 14.

Typical Response: Normally people see spine on this image. It may indicate healthy body imagery.

Rejection: of this image may indicate physical injury to the spine or sexual conflict. Females with sexual trauma may reject this image because it symbolizes male phallic region. A male suffering from impotence may avoid perceiving this image.

Image 15.

Typical Response: Female sex organ is the normal response on this image. It may indicate healthy erotic imagery. It also suggests no conflict in the sexual area.

Rejection: If a female rejects this image, it may indicate low self and sexual conflict with male. If a male rejects this image; it may indicate deep rooted sexual conflict with females.

Image 16.

Typical Response: Fetus is the normal response on this image.

Rejection: of this imagemay indicate trauma with females suffered from abortion. It may also indicate abortion in some family members.

Image 17.

Typical Response: Breast (MT) is the normal response. Perception of breast may indicate good interpersonal relationship with a mother or mother figure. It also indicates good relationship with opposite sex.

Rejection: of this imagemay indicate deprivation/ conflict with mother during childhood. Those who lost their mother during childhood, lived away from their parents, or reared by grandparents, often reject this image. A female having undeveloped breast or saggy breast, or sexual trauma may also reject this image.

Image 18.

Typical Response: Couple, a man and woman (MT) is the most common normal response in this image, which may indicate smooth interpersonal relations between man and woman/ couples.

Rejection: of this imagemay indicate poor interpersonal relationships between couples or between a man and woman, or mother and son.

Image 19.

Typical Response: Two persons (MT),particularly father and son is a normal response. It may indicate good interpersonal relations between father and son, boss and subordinate.

Rejection: of this imagemay indicate a poor interpersonal relationship between father and son or between an employer and employee or between an adult and child.

Image 20.

Typical Response: Two persons (MT),particularly colleagues, siblings, and friends, interacting, doing something are normal responses. It may indicate good peers' relations.

Rejection: of this image may indicate a poor interpersonal relationship between two persons.

Image 21.

Typical Response: Knives, paper knives, paper planes are the normal response. Perceiving knives thrown on someone, being attacked or assaulted indicates uncontrolled hostility and aggression.

Rejection: of this image may indicate suppressed aggression.

Image 22.

Typical Response: Heart is the common response on this image. Cardiac patients often reject this image. Seeing a heart is a sign of good prognostic indicators in cardiac patients because he has accepted the illness and learned how to manage and live with it.

Rejection: of this image may indicate cardiac problems with self or with significant family members. It may also indicate a conflicting love relationship.

Image 23.

Typical Response: Malesex organ is the normal response on this image. It may indicate healthy erotic imagery. It also suggests no conflict in the sexual area. Snake, spine, missiles, sailing boats in sea/river, indicates symbolic Freudian connotation of male sex organ.

Rejection: of this image may indicate sexual conflict. Females with sexual trauma may reject this image because it symbolizes male phallic region. An impotent person may also reject this image.

Image 24.

Typical Response: One many legged insects like spiders, sun and two hearts are the normal response. A person having frustrated love affairs may perceive crushed spiders or many legged animals in the center and two separated or broken hearts on either side.

Rejection: of this image may indicate broken love affairs. A person with broken love affairs often perceives two separated or broken hearts.

Image 25.

Typical Response: Gun is normal response. Gun fired, shooting may indicate aggression and hostile attitude.

Rejection: of this image may indicate suppressed hostility/aggression.

Image 26.

Typical Response: Body resting; soul leaving body; person doing yoga; dead person (MT) are normal responses.

Rejection: of this image may indicate death anxiety.

Image 27.

Typical Response: Child (MT), and fetus is normal response on this image.

Rejection: of this image may indicate death of child during infancy or abortion.

Image 28.

Typical Response: Mother hugging the child, mother holding the Child (MT) is a normal response on this image and it indicates the person loves his/her mother. It also reflects a smooth loving relationship with parents, particularly with mother. Such persons would also have loving relations with elderly women.

Rejection: of this image may indicate conflict with mother. A person who has lost his/her mother during childhood may often reject this image.

Image 29.

Typical Response: Running person (MT) / boy / human figure is the most common response, indicating good ego strength, positive attitude, and healthy body imagery. Perceiving one legged man running/ jogging indicates low self and negative attitude.

Rejection: of this image may indicate low self and inferiority.

Image 30.

Typical Response: A family of father, mother and two Children (MT) is the most common response on this image. It indicates a smooth relationship among family members. It may also indicate a happy childhood with parents.

Rejection: of this image may indicate poor interpersonal relationships between parents and children or among close family members.

Brief Interpretation of Indices scored as High and Low:

High R (Total Responses):

The optimal number of good quality responses (more than 30) suggests imaginative capacity, high productivity, and higher functioning intelligence of the subject. It also indicates involvement, activity, and interaction with the outer world. More than 35 responses with high MT are an indicator of creative involvement, team makers and normal protocol.

Low R (Total Responses):

The low number of responses (less than 30) suggests low productivity and poor imaginative capacity of the subject. It also indicates that the person is not interested in his surroundings and is not involved in activity with the outer world. It also indicates withdrawal tendency. Less than 25 responses with low MT are an indicator of serious psychological issues. More often low R is seen in maladjusted clients, psychologically ill patients, and persons with lots of unprocessed unconscious material. Person with such a profile needs thorough processing for exploring and treating the unconscious materials.

High Human:

The presence of high Human responses (more than 20 %) may indicate that the person is keeping a smooth interpersonal relationship with other people. It is also an indicator of high self-esteem and good interpersonal skills. High percentage of Human responses are observed in Executives, Team makers and Normal subjects.

Low Human:

A low number of human responses may indicate low level of empathy, lack of interest in others and poor interpersonal skills. The most frequent reason for this lack of interest is hostility leading to an intellectual aversion for people. When Human responses are low, it might be indicative of a desire to be away from others and a strong indicator of schizoid or social isolation tendencies. Psychotics who are less interested in the motivation of others have a low human percentage.

High Animal:

A high number of animal responses may indicate that the person has a stereotypical manner of approaching the world, immature thinking, and aggressive attitude. Individuals who lack closeness to other people may either reject blots or may perceive more of animal contents. Children often give comparatively more of Animal responses than adult subjects.

Low Animal:

A low number of animal responses may indicate that the person has control over emotional expression. It is also observed that the moderate number of Animal responses helps in the outlet of aggressive behavior and releasing tension. Low percentage of Animal responses are found in intellectually superior Individuals, normal subjects, and team makers.

High Human and High Animal:

The presence of high Human responses (more than 20 %) may indicate that the person is keeping a smooth interpersonal relationship with other people. It is also an indicator of high self-esteem and good interpersonal skills. High percentage of Human responses are observed in Executives, Team makers and Normal subjects. However, if the protocol has a high percentage of Animal responses (more than 35 percent), it may indicate that the person has a lot of frustration, immature thinking, and aggressive

attitude, which serves as a negative motivational force.

High Anatomical:

A high number of anatomical responses may indicate somatic preoccupation and associated somatic/ bodily symptoms. Medical/ biology students, and children give comparatively more of anatomical responses. However, high percentages of anatomical responses in nonmedical subjects justify the conclusion that the individual is suffering from "intelligence complex" or hypochondriacal ruminations.

Low Anatomical:

A low number of anatomical responses indicates somatic awareness and control over bodily symptoms. Such persons can manage minor aches and pain and consider this as part of life. They do not pay more attention to bodily symptoms. The anatomical responses are seen less than 15 % in a normal protocol.

High Sex Content:

A high number of sex responses may indicate sexual preoccupation and conflict in sexual area. Heightened anxiety and pathology may be associated with either heightened projections or impaired recognition of embedded sexual structure. Persons having dissatisfaction in relationship and deep-rooted sexual conflict may perceive more of sex responses. Sex responses ranges 3-5 in a normal protocol.

Low Sex Content:

A low number of sex responses may indicate good control over sexual desire and observing the demands of society. It is a sign of normalcy. On an average, normal protocol depicts less than 4 sex responses. Avoiding perceiving sex responses on an image with imbedded sexual structure may indicate deep rooted sexual conflict and a strong indicator of impotency. Sex responses ranges 3-5 in a normal protocol.

High Other Content (More than 7):

The responses which do not fit into the content categories-Human, Animal, Anatomical and sex, are scored under "Other" Content. These responses include Art, Blood, Plants, Anthropology, Clothing, Clouds, Fire, Food, Geography, Household, Landscape, Nature, Science, X-Ray etc. Normally such responses are less than 10 percent in a normal protocol. However, the preponderance of other contents may indicate tension, and anxiety. It may also be an indicator of evading reality and psychological disturbances. If there is preponderance of a content such as Cloud, or Fire, it must be enquired during the interview session to ascertain its intensity and clinical significance.

Low Other Content (6 and below):

The responses which do not fit into the content categories-Human, Animal, Anatomical and sex, are scored under "Other" Content. Normally such responses are less than 10 percent in a normal protocol. Presence of "Other contents" less than 6 is normal.

High Most Typical (MT):

Ahigh number of Most typical/ Popular responses is suggestive of coherent, logical thinking and an ability to keep up with the demands of the society. It may also indicate a popular view of the world with social standards. Often such individuals may have conventional ways of thinking and are associated with human relationships. Individuals with 13 and more MT responses make an exceptionally good team. They can influence others with their views and can easily agree with the views of others. Such

people keep good interpersonal relationships and adjustment. More than 10 MT responses are present in a normal protocol.

Low Most Typical (MT):

A low number of Most typical / Popular responses may indicate that the person has non-conformity of social norms and away from reality. Such people have poor adjustment and avoid contact with others. Often, they invite conflict because they are misunderstood by others. They find it difficult to develop good interpersonal relationships and misfit in a team. Neurotics and maladjusted show between 7-9 MT responses and Psychotics give less than 6 MT responses in a protocol. MT responses are the hardcore indicator of abnormality.

High Movement:

A high number ofMovementresponses with high percentage of H and MT responses are associated with high fantasy, creativity, functioning intelligence, active involvement and good interpersonal relationship. High M is also correlated with an introverted personality.

Low Movement:

A low number ofMovementresponses with low percentage of H and MT responses indicates withdrawal tendency, aloofness, and strong indicator of depression. Such people show poor adjustment and poor interpersonal relationships.

High Typical Responses (T): (Score 6 and more):

Typical responses are those which are commonly seen by healthy people on an image. The range of Typical responses are 20 to 50 percent in a normal protocol. Ahigh number of Typical responses (**more than 6 or 20%**) is suggestive of coherent, logical thinking and an ability to keep up with the demands of the society. Often such individuals may have conventional ways of thinking and keep good interpersonal relationships. Such persons are found to have good adjustment and make a good fit in any team.

Low Typical Responses (T): (Score 5 and below):

Typical responses are those which are commonly seen by healthy people on an image. The range of Typical responses are 20 to 50 percent in a normal protocol. Alownumber of Typical responses (**5 and below or less than 20 percent**) is suggestive of ignorance with the demands of the society and a kind of withdrawn attitude. Often such individuals have poor adjustment and poor interpersonal relationships.

High Scores on Hostility and Aggression Scale (HAS 3 and More):

When a person perceives humans or Animals in aggression, fighting, or any kind of hostility and aggression reflected in the projected responses involving physical assault or body injury will be considered under HAS category. Responses such as aggression in a dormant state; a human or an animal that is seen as fierce, aggressive, or dangerous; a hostile attitude, may indicate mild aggression. However, Animals or Humans seen as angry or in aggressive struggle, verbal or physical aggression, murderous themes, can be considered as indicators of major HAS.

A person with signs of major HAS must be treated with pharmacological aides and psychotherapy in an aggression Clinic. Such persons get flared under emotions provoking situations and find it difficult to control their aggressive behavior. More than 3 responses are a strong indicator of Hostility and Aggression.

Low Scores on Hostility and Aggression Scale (HAS less than 2):

A person with signs of one or two HAS responses with mild intensity such as "two persons arguing" are considered within normal range. Such persons have control over emotions provoking situations and show desirable behavior. They can serve as agents to dissolve the aggressive behavior of another person. They can serve as good team members and keep good interpersonal relationships. HAS 1 and Zero (0) is a desirable score.

High Scores on Depression (D) 3 and More:

The responses showing depressive content such as weeping person, a grief-stricken person, depressed mood, sad face, a heavy heart, a breaking heart, or a heart with a clamp on it, suicidal, hanging from roof, or a dead man may be considered as indication of Depression. Responses projected by subjects such as sighing, weeping, downcast eyes, etc., which are consistent with the experienced affect also indicate depression. In a state of masked depression often they conceal or deny their feelings. Frequently, they are preoccupied with their bodies, hypochondriacal, and project more anatomical responses. More than 3 responses or even a suicidal/homicidal response may indicate a Depressive feature. Such persons will be low performers, aloof, misfit in teams and will have poor interpersonal relationships.

Low Scores on Depression (D) less than 2):

The responses such as weeping person, a grief-stricken person, depressed mood, sad face, a heavy heart, a breaking heart, or a heart with a clamp on it, may be considered as indication of Depression. Absence of these responses are indication of healthy personality. However, if the scores are less than two, it is considered within normal range, and less than one response is more desirable. Such persons keep good interpersonal relationships, actively involved in group activities, lively and energetic.

High Scores on Pathological Anatomy Scale (PAS 3 and more):

Subjects who have personal health concerns, or who have concern with the health of others, may project responses in which the body is seen as diseased. These responses are usually related to specific regions involved in the subject's body and can be appraised by evaluating the nature of the somatic material projected. The subject may perceive the body parts as red, inflamed, infected, cancerous, sore, painful, hurting or broken. Individuals who project these responses should be further evaluated for either hypochondriacal or excessive concern about physical health. This material should be explored, clarified, and assessed in the follow-up interview, since the subject may still have unresolved anxiety about this alteration in body concept. The total number of such responses below 2 falls in normal range and scores above 3 indicates health concern and hypochondriasis.

Low Scores on Pathological Anatomy Scale (PAS 2 and less):

Person having health concerns for self or others, may project responses in which the body is seen as diseased. These responses are usually related to specific regions involved in the subject's body image and can be appraised by evaluating the qualitative nature of the somatic material projected. Body parts might be reported as red, inflamed, infected or cancerous. Organs may be sore, painful, or hurting. Passages may be blocked or obstructed. Bones may be out of place or broken. The total number of such responses below 2 falls in normal range and does not indicate concern with health.

High Scores on Paranoia (P 3 and more):

An emphasis on the eyes of people or animals staring faces or pointing index finger may indicate paranoid ideation/suspicious attitude. An emphasis on the eyes of people or animals, staring faces may be present in anxiety-laden dreams, and may also indicate a paranoid /suspicious attitude. The person having more than 3 P responses is likely to have suspicious attitude and paranoid ideation. Such persons may doubt the intention of others and will mistrust others. It is an undesirable personality feature.

Low Scores on Paranoia (P less than 2):

Ifresponses such as **"**emphasis on the eyes of people or animals staring faces or pointing "index finger" or seeing such responses in anxiety laden dream is less than 2 (two) will fall within normal range and will not be indicator of paranoid /suspicious attitude. Less than 1 /zero is more desirable. Such people have trust in others and make good interpersonal relationships.

Interpretation of SIT indices is not dependent on a particular number of responses. This is a vast improvement over the Rorschach test, which requires "Quantitative interpretation" to be based on the number of responses in different scoring categories. All leading methods like Klopfer, Beck, Schafer and Exner depend on a minimum number of responses from a subject for a successful analysis. Less than 14 responses (Exner,1974) the protocol cannot be interpreted. Similarly, "none of the ratios can be interpreted unless there are at least three Human Movement(M) responses" (Klopfer, 1954).

Content Analysis and Psychoanalytic Interpretation of the responses has been a powerful way to augment and rise above quantitative analysis (Cassell and Dubey, 2003, Dubey et al 2019).

In summary the SIT emphasizes:

Content analysis and Psychoanalysis,

Interpretation of indices in terms of LOW and HIGH percentage,

Exploration of unconscious motivating forces through REJECTION of Images.

Case 1: Therapeutic Intervention through SIT in a Case of Depression:

Abstract:

The Somatic Imagery Test was administered to a 58-year-old male to understand his personality and psychopathology of depressive features. He reported feelings of aloofness, desire to stay alone at home and loss of interest in most social activities. He had been under the care of a physician with a regime of antidepressants. The SIT images pointed to poor interpersonal relationship with family, particularly with his wife, erotic conflict, and affectional deprivation. The responses were analyzed using content analysis and psychoanalytical interpretation (Cassell and Dubey, 2003; Dubey et al, 2019).

The Somatic Imagery test (SIT) is a quick assessment tool with 30 somatic images. It is designed for self-administration after supervised instruction. The subject is asked to go to http://dubeyhealingcenter.com and follow the instructions:

"Most people find this test fun and interesting. First, please relax, and prepare to enjoy it. Please write each in terms of what they resemble or look like to you. Different people see different things in the inkblots. It is important to write whatever the inkblot looks like to you. Please include everything you see even if it reminds you of something remote, vague, highly personal, or even potentially embarrassing. Please include everything you see with as much detail as possible. Also include any outstanding emotional reaction that you might feel in responding to these images". The test may take

about 30 minutes to complete. Please be assured that there are no right or wrong answers.

The Case:

The Client Mr. X was a 58-year married male, from a middle stratum of society, who approached for help. The main complaints of the client were the feeling of aloofness and desire to stay alone at home. He does not enjoy any activities and wishes to keep away from others.

His developmental milestones as reported were normal. He had parental love and grew in a joint family. He got married at age 23 and has two children - a son and a daughter, both grown up, married, and settled. He is self - employed and doing well. He had problems with his wife right from the beginning and have no emotional support. On many occasions he found her more critical. Consequently, he prefers to withdraw and keeps away from her.

The client was advised to take online the SIT (Dubey and Dubey, 2018, Dubey et al, 2019) for understanding his overall personality and unprocessed unconscious material that needed to be addressed during psychotherapy. His responses were interpreted using content analysis and psychoanalytic interpretation. **A few clinically significant responses are interpreted ahead to understand the pulling power of SIT images:**

Image 3: A man holding symbol of Love may indicate the feelings of the client as he is carrying over the burden of love with his wife. He explained as he is holding the symbol of love and carrying his personal life to satisfy the family. He has an extremely poor relationship with his wife**.**

Image 4: He did not perceive the common response "Teddy bear" and viewed it as advertisement of Dress or Shoe or Football Tournament. The rejection of the teddy bear may indicate a poor relationship with his son which he accepted during therapy.

Image 5: He viewed on this image as **"**Apple, Lips and sort of female legs" and avoided the most common response "Dancing lady". If a male has not perceived "dancing lady" it indicates that the man has had a traumatic experience from a female and that the happiness from his life has gone away. During therapy he could remember the kind of taunts and negative attitude of his wife right from the beginning.

Image 9: He perceived on this image **"**2 Penguins not in action". He could not perceive two penguins in action may indicate his pensive mood and depressive features. It may further indicate the kind of feelings of separation and aloofness with conflict in love relations. We have observed that couples having conflicting relationships may avoid or be unable to see birds kissing or making love.

Image 13: "A Man with two Kids" is the normal response on this image. It indicates a good interpersonal relationship with his father.

Image 15: He viewed it **"**Necklace" and avoided female genital which may indicate deep rooted sexual conflict with female. During the therapy session he shared his dissatisfaction and conflict with his wife.

Image 17: "Women's breast covering with one hand" may indicate his feelings of

deprivation of affection and making distance from her spouse.

Image 18: "A man touching his head with a Woman Head" may indicate client's desire to be emotionally together. A man touching his head with a Woman's Head may also Indicate desire to have loving relations with a lady.

Image 22: He perceived on this image **"**Lips open in a painting" which may indicate affectional deprivation. It may also indicate oral erotic and passive-receptive tendency with sexual preoccupation (Schafer, 1948).

Image 23: He viewed this image as **"**A fish in an ocean" may indicate sexual fantasy and desire to satisfy his erotic impulses.

Image24: He perceived it as "Painting of earth" and avoided two hearts- a common response on this image, which may indicate broken love affairs. During Therapy he shared his broken relationship.

Image 30: He viewed this image as **"**A family of four" indicates poor interpersonal relationship among the family members. It may also indicate as they do not interact and have no bonds. This is the last image of the test and created to express happy family feelings while going back home. Generally, people having disturbed relationships among family members, may reject this Father. Mother and two children would have been a good response to this image. Persons having disturbed interpersonal relationships between parents and children or among close family members may reject this image and generally perceive mushrooms or four plants.

It can be concluded that the SIT images projected disturbed relationships with his wife, sexual conflict, suppressed aggression and affectional deprivation. Pharmacological aid and psychotherapy will help in the management of unresolved conflicts.

Possible Indices:

Indicators of Executive / Team makers on Inkblot images:

- Most Typical Responses: 13 and more.
- Human Responses: More than 30 percent.
- Animal Responses: Less than 15 percent.
- Anatomical Responses: Less than 15 percent.
- Erotic Responses: Less than 5.
- Total number of responses: 34 and more.
- Movement Responses: More than 6
- Rejection of Images- Zero.
- Pathological Responses- Zero.

Possible Indicators leading to detect Criminals on Inkblot images:

- High aggression (HAS), impulsive outburst. evading reality.
- Perceiving Murder, blood, attacks, conviction, homicide/suicide,
- High erotic attitude (Perceiving more sexual anatomy, genitalia, breasts/bust).
- High Animal sexual imagery (buttocks, reproductive organs) .

- Immaturity (Low Human and High Animal responses).
- Low MT Responses (Evading reality and social norms).
- Preponderance of sex responses (more than 5) even on images not depicting erotic imagery.

Possible Indicators leading to detect sex perpetuators on Inkblot images:

- Perceiving sex responses more often (more than 5 on thirty images SIS).
- Perceiving Sexual anatomy such as genitalia, breasts/bust, Or Human or Animal anatomy and x-ray responses concerned with body parts in the waist area such as hips, buttocks, pelvic region, and internal reproductive organs.
- Erotic contents such as masturbation, playing with genitalia, breasts, buttocks.
- Confusion of sexual identification of either humans or animals having physical features of both sexes and clothing, grooming, or described as a hermaphrodite or as androgynous.
- Sexual deviations: bestiality, sex with children, sex with nonconsenting partners, cross-dressing, exhibitionism.
- Responses such as underwear, see-through clothing, disrobing, or partial nudity.
- Heterosexual/ Homosexual behavior involving sexual acts between human or animals.
- Sexual interaction such as kissing, love, holding hands, stroking, playing with hair, flirting, massaging, dating.

Possible Psychotic Indicators on Inkblot images:

- Most Typical Responses: Less than 6.
- Human Responses: Moderate to high with low quality.
- Animal Responses: Often more than 20 percent.
- Anatomical Responses: Moderate to high.
- Erotic Responses: more than 5.
- Total number of Responses: often high more than 40.
- Movement Responses: High with low quality.
- Rejection of Images- Many Images.
- Pathological Responses- High on PAS and Paranoia.

Possible Neurotic Indicators on Inkblot images:

- Most Typical Responses: Often in the range of 7-9.
- Human Responses: Low to Moderate with low quality.
- Animal Responses: Often more than 20 percent.
- Anatomical Responses: High (Very high in Hypochondriasis).
- Erotic Responses: High.
- Total number of Responses: Often Less than 30.
- Movement Responses: Low in Depression and Anxiety).
- Rejection of Images- Many Images.
- Pathological Responses- High on HAS and Depression.

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SIS CERTIFICATION

Be a certified trainer and practitioner of Somatic Inkblot Test. The Participants will be certified by International Somatic Inkblot Society. The certificate program is open to Psychiatrists, Clinical Psychologists, Psychologists, Psychiatric Social Workers, and HR Professionals.

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Mental Health and Psychosocial Impact of Type 1 Diabetes in adolescents of Low-Socio Economic Strata- A Qualitative Study

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Juvenile or Type 1 Diabetes being a lifestyle disease is associated with a lot of complications in terms of lifestyle changes, treatment adherence and disease associated complications. In India, the increasing numbers of adolescents are getting affected with this disease. Considering this context and owing to a limited number of studies in this area, it is important to understand the psychological impact of the disease on affected individuals. The sample comprised of 6 adolescents, 3 males and 3 females, diagnosed with Type 1 diabetes mellitus, the age range being 12-18 years, minimum age of diagnosis being 10 years. A qualitative method was adopted. A semi-structured interview was conducted comprising of questions related to trauma reaction to the diagnosis, changes in perception and attitude towards life along with cognitive appraisal of medical management of diabetes. The method of content analysis was used, unit of analysis being themes, to arrive at prominent themes and subthemes. Analysis of the subjective responses indicated psychopathology of helplessness and hopelessness, shame and associated stigma, low self esteem, loss of future goals and aspirations along with interpersonal difficulties. Belief related to difficulties in living with the disease was also reported across several domains. The above factors may be taken into consideration in developing psychological treatment guidelines as an adjunct approach for affected adolescents to enhance adherence to diabetic treatment, especially in developing countries like India.

Introduction:

About 40 to 60% of adolescents younger than twenty years of age are being diagnosed with Type 1 diabetes making it one of the most severe and chronic diseases of childhood affecting about 0.3% of the general population by twenty years of age and about 0.5 to 1% during the lifespan (King, et al, 2008). The International Diabetes Federation in its atlas for diabetes has revealed that in India, three new cases of juvenile diabetes are reported in everyone lakh children up to fourteen years of age (Kumar, et al, 2008). Type 1 Diabetes Mellitus (T1DM) has been found to be associated with mental comorbidities including anxiety, depression, and irritation (Khandelwal, et al, 2016). Presence of a chronic disease like T1DM often limits one's abilities to cope with daily life owing to the stress associated with coping with the disease (Akre & Suri, 2014). With every diagnosis the management often becomes more complex and thereby an exploration of the psychological and emotional factors might help cater to a better understanding of the disease along with necessary amendments in the treatment program. Moreover, adolescent years are often characterized by turbulence, hormonal,

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metabolic and psychological changes which might have a significant impact on mental health (Tfayli & Arslanian, 2007) as patients with T1DM are at increased risk for suicide (Pompili et al., 2014).

The disease has also been found to create difficulties in interpersonal sphere. The most significant of all lies in the burden of management often which falls in the hands of the caregivers, here been parents. Often parents have difficulty in coping and coming in terms of the disease and learning to deal with it (Carpentier, 2008). Presence of stressors in adolescent ages along with further difficulties of coping with the disease makes this process of living with this disease even further complicated (Kazak & Streisand, 2003).

A thorough subjective understanding of how the disease tends to disrupt the psychosocial aspects of the affected adolescents would help generate insight about what factors of the disease are responsible for high psychiatric morbidity in adolescents with T1DM. An exploration of psychological factors may further provide scope for improvement of management of the disease inclusive of these variables. This will help to promote health behaviors and reduce reinforcement of stereotypes associated with the disease (Cooper et al, 2014).

Materials and Methods

A qualitative methodology using content analysis was employed to gain a subjective understanding of experiences of adolescents living with Type 1 diabetes respect to their reactions to diagnosis, changes in lifestyle, and problems in personal life, perceived changes in meaning of life, motivating and non-motivating factors for treatment.

Sample: Six adolescents (3 male and 3 female) with age ranging from 12 years to 18 years (Mean Age = 15.60 years, S.D. = 1.81) were chosen randomly as participants from Juvenile Diabetes Research Association, Kolkata, (India). All the participants were regular students ranging from 8th standard to 12th standard. Most of them belonged to the rural areas of West Bengal, with predominance of participants from lower strata of society. A medical diagnosis of Type 1 diabetes given by an endocrinologist was required with minimum age of diagnosis being 10 years. Only participants with at least 6 years of education were included for the study. Individuals with presence of any other physical illness, with history of head injury or presence of any developmental disorder, substance abuse and psychosis were not included in the study.

Materials: To rule out alcohol or substance dependence and presence of psychotic disorders, the Mini Neuropsychiatric Interview as administered, forms J, K and L was used (Sheehan & Lecrubier, 2006). All of them including their accompanying guardians were briefed about the purpose of the study and consent was taken before inclusion. Socio-demographic and clinical details were taken, and a structured and open-ended interview was done with one participant at a time. An interview schedule was prepared based on objectives of the study and after consultation with experts.

Data analysis: After the interview was conducted, the following steps were executed (Table-1):

Table 1: Steps of Qualitative Data Analysis

Transcription	In this process the participant's responses were converted into their verbatim in written form and all necessary details including non-verbal cues for the purpose of further coding (Stuckey, 2014).
Open Coding	Codes were identified without any restrictions and with sole purpose of finding meaning in the responses. In simpler terms, important sections in the responses were marked and highlighted to denote distinct categories (Stuckey, 2014).
Focused Coding	Initial codes that reappear frequently were clubbed and labelled together into categories. Re-coding of transcripts was done to obtain a clearer picture of the nature of responses (Stuckey, 2014).
Axial Coding	The above categories obtained were further refined and a dimensional profile for each category was indicated. A more directive approach was followed to confirm the concepts obtained and to understand how the concepts and categories are related (Seidel, 1998).
Conceptual Mapping	A diagram was prepared based on the above responses to get a better understanding on the results (Daley, 2004).

The method of content analysis was used to further analyze the data following a tri-dimensional approach of conventional, directive, and summative to interpret the meaning in the context of the data and the unit of analysis were the themes obtained from the above (Hseih & Shannon, 2005). The analysis of the responses obtained were organized into themes following the Attride-Stirling model, the objective of the study involved bringing about the Basic themes, organizing themes and the Global themes which would help explain some of the pertinent research questions in light of the objectives of the study (Attride-Stirling, 2001).

Results:

Table 2: Illustration of Category Development from Respondent Interviews

Focussed Coding	Axial Coding
Physical symptoms – dry mouth, diet problems, fluctuating blood sugar levels, frequent urination	**Physical & psychological reactions to diagnosis**
Bad state of health, feeling of being sick	
Lack of knowledge about disease- lack of awareness related to the disease in immediate surroundings	
Why me? What did I do wrong? Why did this happen to me?	
Why it happened?	
Hopelessness- future is very vague, what about our dreams and aspirations	
Disease is not a blessing	
Restrictions in social network- limited social activities	**Perception of changes in lifestyle**
Inability to fulfil desires	
Financial struggles, cost of medicines, insulin, doctor visits	
Stigma,	

Increased health consciousness - Are blood sugar levels normal? Is the sweating too much?	
Low self esteem	**Perception of changes in self**
Presence of doubt over capabilities- what if I feel sick during the exam?	
Poor self image	
Comparison with others- They are able to do things which if I do, I may fall sick	
Feelings of inferiority- My health may not support me in my daily activities	
Loss of goals and aspirations	**Psychopathology**
Death wishes – Too painful, it's better to die	
Fear of death	
Inability to cope with life – dealing with a chronic illness is perceived as an extra stressor	
Sense of hopelessness	
Loss of prospective life partner- One might not get a suitor owing to the presence of this disease	
Helps be in control of symptoms	**Positive factors of treatment**
Able to carry out daily tasks	
Help from other patients towards maintenance of self care- support from other adolescents going through the same problems	
Promotes welfare- aided support gives courage to others, they are not alone in this	
Stigma	**Negative factors of treatment**
Hiding treatment regime from others- I don't want others to know that I take insulin	
Pain of inserting injections	
Frequent body aches – joints, limbs, etc. on physical exhaustion	
Issues with intake of insulin in open surroundings	

The results presented here report the views and experiences of adolescent patients with type 1 diabetes from lower economic strata attending a multidisciplinary health care team free diabetes clinic. Responses on the various axial coding or categories (Table-2) are analyzed in detail as given below.

Reactions to diagnosis: This category relates to the way the patients expressed their reactions to their initial diagnosis. Reactions to the diagnosis in this study were mostly characterized by fear about whether diabetes is an extremely dangerous illness, whether one will be able to survive with the disease and how common was the disease at this age. Lifelong treatment aspects are also considered by participants as to whether there is a secondary option to treatment aspects. Personalization questions of "Why me" were also reported, like a female interviewee reported that "I used to think that why did this happen to me? This was not supposed to happen.". Respondents also reported their lack of any understanding about this disease process before the diagnosis. Fear, anxiety, and a sense of hopeless feeling about this disease were also observed. Respondents also highlighted

continuous dry mouth and diet related issues at the beginning.

Perception of changes in lifestyle: Keeping mostly to self and avoiding visiting places highlights changes in the interpersonal sphere and restrictions in the same. The restrictions in interpersonal aspects are not due to the presence of the disease but owing to the stigma associated with the disease. A male adolescent interviewee reported that "Due to the presence of this disease, ... others can do this or that, can eat this can eat that, but I am not being able to eat. They are happy to visit some place, but I am not able to go here and there. If its someplace extremely far, I am not able to go... I want to go but I cannot because I may fall ill suddenly, if something happens what will I do? This kind of tension often occurs."

Another participant reported that "Due to this disease if I go to some place, if others eat something which even I can, but still, I have to weigh and eat, I don't have any personal life of my own, ... most of the time I stay alone, ... and
I don't feel good about it".

Dietary restrictions and a constant precaution towards blood glucose fluctuations were a major concern for most participants. A female interviewee reported that "The fact that I have to check my blood glucose every time, to see whether I have more sugar in my blood, ... whenever I test sometimes it comes less, sometimes it comes more... gradually I could understand that the way I eat reflects on my blood sugar levels... I am able to understand it's not right, that is why the levels fluctuate".

Perception of changes in self: After diagnosis with the disease, an excessive concern over one's health has often led to issues with low self esteem along with less confidence in own abilities. Certain life goals are compromised, for example, two participants reported that they were unable to pursue their studies as the disease related complications were serious and other symptom manifestations like joint pain, excessive weight loss and restriction in physical activities were making things worse for them. One participant reported that his self image had become very poor as minor fluctuations in his blood glucose levels made him feel that he was incompetent to take care of his own health, " I am no longer able to believe in myself... when my blood test reports come bad, then I feel very bad, I wonder that how could this happen, how will I be able to keep myself properly, I worry about that, my faith on myself has reduced".

Psychopathology: After diagnosis of diabetes, adjusting to lifestyle changes has often led to difficulties in sustaining one's livelihood. Most participants reported significant financial struggles in their families after been diagnosed with the disease, for example a female interviewee reported "Mother had to take up a job, for my medications, for this reason I would often feel very bad about it...she has never done all this work before, like going in another person's house and working... so for this reason I would feel very bad".

Treatment expenditure also tends to weigh heavily among family members. Loss of future goals and aspirations mostly led to the development of negative and pessimistic views

about one's life, for example, a male interviewee reported that "A lot of money has been spent behind my illness, we don't have our own place, meaning we don't have any property of our own, mother wanted to give us a future, but now because of this disease, this did not happen, a lot of money has been spent behind my treatment, but for my well being, I have to undergo treatment".

A sense of hopelessness was also found to be prevailing. One of the participants also reported that she would feel that she would probably not survive for long owing to the seriousness of the disease, "I used to think that I would not take insulin, if I take insulin I might end up dying."

Another major factor which got highlighted was the fact that they might not get a life partner, hence will not be able to get a major aspect of life. This was more prominent for female respondents.

Positive factors for treatment motivation: Among diabetic population, support from other diabetics has been found to play a major role. Benefits from treatment have also been found to play a positive role and provide encouragement to diabetics to continue with treatment. An adolescent male participant reported; "I like to talk with other diabetics, they encourage me. I see this disease as a fight/challenge, if everyone stays well then I also feel good about it, I get encouragement from it".

Another participant reported that "After I started treatment, I feel that I am feeling better, I will be able to do something in life, I will be able to do anything I want".

A female interviewee reported that "If I take insulin, I stay better, I am able to do my work, if I stay well then my mother, father and family all will stay well, everyone is very concerned about me".

Negative factors for treatment: Insulin intake by itself is a painful procedure for most of the respondents. A male interviewee reported that "Sometimes I don't feel like taking the injection, I have a lot of pain. Then I get angry. I do take it but I feel it is better if I don't take, how many days do I have to take it, till the days I live? It pains a lot, I feel like crying, may be some days I do not have any difficulty but still I must push it. When it pains, I suffer a lot, at that time I feel awfully bad".

There was also a perceived loss of control over one's body due to which often death wishes, and death anxiety are common along with apprehension about what would happen the next moment. Treatment considerations were often kept secretive, like one participant reported that he would only take in insulin when he was alone, and not in the presence of other, he would be scared as to how others would react to it, "The days I end up eating a lot, or when I am travelling, then if I have to take insulin, I don't feel like telling anyone that I take insulin, I have to hide and take it".

It appeared that the societal structure also did not support discussion of the treatment measures with others owing to the stigma associated with it. Certain treatment changes were also suggested, like one female participant expressed that "I want to stay well, but still if without taking insulin, some other medication maybe

taken then that would be good, to pierce myself three times with an injection is something I don't like, neither do others like".

Discussion:

This study helps to address lack of research on psychological and social aspect related to treatment of adolescents having Type 1 Diabetes in low economic strata in a developing country. Various sub-themes have emerged with a detail understanding through a qualitative research design that may have some impact on treatment approach of this population to improve their quality of life. It is a fact that most patients have limited awareness of diabetes before diagnosis at any part of the world (Clarke, 2003). The conceptual model (Figure-1) highlights how this grief reaction along with sense of hopelessness can have impact on individual's emotion. Moreover, difficulties they face related to coping with the newly diagnosed condition may have major impact on the quality of life of the patients. Studies have reported higher level of depression (Kovacs, Ho & Pollock, 1995) and anxiety (Maronian,et al, 1999). Thus, understanding of reactions at time of diagnosis helps determine how the affected individual will end up coping with the disease (Maclean, et al, 2006) and this itself has significant future implications related to treatment adherence and complications.

Complications resulting from diabetes make it a type of chronic illness (Thoolen et al, 2008) and thus it is a disease which requires regular monitoring to help keep a check on development of disease related complications. Thus, there still exists significant difficulty in terms of making adjustment to the demands of coping up with a lifestyle disease. It is not unusual for patients to find changes in both lifestyles including social or interpersonal restrictions and self-image (Figure-1). The disease is associated with negative self-image because of presence of negative emotions associated with T1DM owing to loss of health (Nishio & Chujo, 2018). These changes coupled with perceived low quality (Alvarado-Martel et al., 2015) of life can have significant influence on patient's understanding of the meaning of life that is probably giving rise to a sense of hopelessness. All these factors tend to reflect an overall poor quality of life in the participants. A poorer quality of life has often led to poorer self care which by itself has adverse implications because diabetes is by and large a self managed disease. Thus, subjective findings significantly highlight the fact that more than the presence of the disease, it is the distress associated with symptom manifestations that have a greater impact on the perceived changes in the meaning of life of affected adolescents.

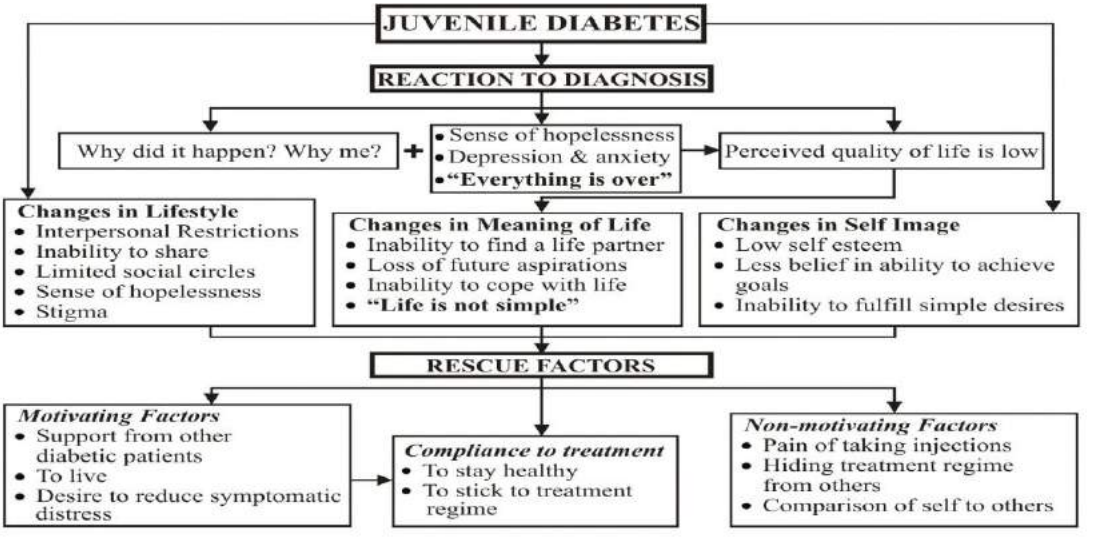
The most important aspect of this study was the identification of the various rescue factors (Figure-1) that can have major influence in treatment adherence. Barriers to compliance like pain in taking injections and stigma associated with taking injections in front of others may be addressed during routine evaluation. These findings related to treatment challenges suggests that certain barriers need to be surpassed in addressing to treatment challenges associated with diabetes especially in the domain of insulin therapy. Though insulin therapy is beneficial and has been medically proven to be beneficial in achieving glycaemic control and reducing long

term complications, certain aspects like insulin administration itself hinders the regime of self care in diabetes. During the counselling sessions the psychological gain of effective treatment of diabetes should be considered as identification of those can work as a motivating factor for diabetes management (American Diabetes Association, 2017). Most importantly, the current study has identified the important role of peer group interaction of patients suffering from Type 1 Diabetes as they get emotional support from other patients and this work as an important motivating factor for treatment compliance.

Thus, it maybe concluded that an exploration of the subjective components of the disease has helped to explore the various distressing issues and challenges which this population faces, and a thorough consideration of these factors may help in improving the overall welfare of such patients.

Some of the limitations could not be avoided in this study. Sample was collected from only one centre, therefore only a particular stratum could be included. Blood sugar level fluctuations may also have had an impact on the data. Since data was collected based on subjective reporting of the participants; there was scope for motivational and other emotional factors to have had influence on their way of responding. The level of chronicity/severity of the disease could not be controlled and this may have had a significant impact on the results. Moreover, only a selected few participant was considered which may raise a question on the overall generalizability of the findings. The participants were mostly from low socio-economic status and this indicates that adequate representation from all sections of the society was not possible. Treatment measures tend to depend upon various factors like economic resources, but such factors were not considered in the study.

Figure 1: Representation of conceptual map after qualitative analysis



Conclusion:

This study thereby highlights the major mental health and social issues associated with TIDM. Subjectively, presence of helpless and hopeless cognitions was indicated, uncertainty with self and apprehension regarding fluctuating blood glucose levels and difficulty in terms of coping and adjusting to the demands of treatment regime were indicated. With respect to perception of self, there existed presence of low self esteem, frequent comparison with others and presence of worthlessness regarding one's own capabilities. Considering treatment factors certain positive factors for treatment were also indicated which included support from other diabetics, feeling of well-being associated with proper adherence to treatment guidelines. Negative factors for treatment indicated pain associated with intake of insulin, loss of control over one's bodily functioning and in terms of stigma associated with the disease. All these findings indicate the need to address the psycho-social aspects associated with T1DM.The differences in these aspects could also be further investigated in developed and developing countries. Future work could also possibly be oriented towards developing an intervention program with emphasis on the overall quality of life of adolescents with T1DM instead of being limited to treatment compliance and adherence. It also emphasizes on the importance of support groups and how they are beneficial in dealing with chronic illnesses like T1DM.

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2	Revista de Neurologia	Spain	Spanish
3	Revista Brasileria de Psiquiatria	Brazil	Eng.,Spani.,Portuguese
4	Arquivos de Neuro-psiquiatria	Brazil	Portuguese
5	Acta Psiquiatricaypsicologica de Amercia Laina	Argentina	Spanish
6	Journal of the Medical Association of Thailand	Thailand	English, Thai
7	British Journal of Psychiatry	UK	English
8	Acta Psychiatrica Scandinavica	Denmark	English
9	Salud Mentale	Mexico	Spanish
10	Vertex	Argentina	Spanish
11	Journal of Personality and Clinical Studies	India	English
12	Social Psychiatry and Psychiatric Epidemiology	Germany	English
13	Revista Medica de Chile	Chile	Spanish
14	South African Journal of Psychology	South Africa	Afrikaans, English
15	Psychological Reports	USA	English
16	South African Medical Journal	South Africa	Afrikaans, English
17	The Australian & New Zealand Jr. of Psychiatry	Australia	English
18	International Journal of Social Psychiatry	U. K.	English
19	Psychiatry Research	Ireland	English
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21	Revista De Saude Publica	Brazil	Portuguese
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