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Editorial:
The Case for a Moratorium on
Moratorium Articles regarding Individual Psychological Tests

The status of tests and measures in assessment, in both mental health practice and training settings, has attracted extensive professional and academic attention over the past 70 years. Bennion et al. (2019, this issue) provide a rather detailed critique regarding the conclusions I offered regarding a literature review study on testing practices with the Bender-Gestalt Test (BGT; Piotrowski, 2016). Indeed, as Bennion et al. argue, my 2016 article does fall short with regard to a) not delineating among the various iterations and/or purposes of the BGT, and b) confabulating research emphasis on the BGT with usage in assessment by professionals overseas.

The focus of the Bennion et al. critique, to the point (based on data analysis of usage trends), concludes that the BGT should not be taught in clinical psychology training programs. However, my analysis focused strictly on BGT practice usage patterns, based on reported findings across studies, over time. There is no mention in my analysis, conclusions, or text affirming that the BGT should be stressed in clinical training. My intent was to present a 'Snapshot' on BGT usage, both in the USA and overseas, across recent decades. Based on all available survey data, no one can argue that some psychologists and a minority of other mental health professionals continue to use the BGT for a variety of assessment purposes.

My rebuttal here does not contest Bennion et al.'s data analyses, but rather focuses on their extrapolated conclusions and more specifically on their rather ardent position toward an individual mental health assessment technique. Interestingly, many years ago, I was severely criticized at a conference by a distinguished neuro-psychologist for my 'acceptance' of the BGT as a useful assessment tool. The striking aspect of the verbal barrage was the level of anger and disparagement expressed by this psychologist—my immediate thought was: How could these rather simple graphic designs (a.k.a., BGT) generate such dishevel in a rather distinguished, stoic academic? So here, many decades later, it is the BGT, once again, that has struck a nerve and garnered intense opposition. I find this rather intriguing than coincidental.

In this commentary, I would like to respond to Bennion et al.'s thoughtful critique along 3 distinct lines of discussion: a) the available extant data reported in prior studies, b) extrapolated implications, and c) motivation. Of these, I consider motivation the major issue which I intentionally want to stress here.

Data: The reported data on the extent of professional test usage of the BGT is rather straightforward, both in my 2016 article and in Bennion et al.'s (2019) detailed analysis. Over the last few decades, clinical reliance on the BGT, as an assessment tool, has clearly declined (dramatically in some clinical circles, such as neuropsychology). In this regard, I concur with Bennion et al.; thus, this trend line indicating diminutive status does not bode well regarding 'future use' of the BGT. But, based on the data, the extent of this de-emphasis does not necessarily apply to all professional specialty areas, i.e., the BGT is still part of the assessment armamentarium of a sizeable minority of school psychologists, professional counselors, and child clinicians (e.g., see Oakland et al., 2016; Peterson et al., 2014). Moreover, clinical evidence suggests that the BGT can still function as an 'ice-breaker' to the assessment enterprise and/or a 'screening' tool for both cognitive functioning and personality functioning. At the same time, with the vast proliferation of newly developed tests and measures (including abbreviated short-forms of cognitive tests), the role of the BGT, undoubtedly, will most probably diminish over time.

Implications of aggregated survey findings: Bennion et al. make a vast leap in reasoning that based on trends affirming diminishing use, the BGT should therefore not be taught in the graduate-level assessment curriculum. Opinions regarding what tests should receive instruction in clinical programs has a long, contentious history that has not been adequately resolved and remains a strongly contested, perennial training issue in contemporary clinical psychology (see Kaslow & Egan, 2017; Mihura, 2018; Piotrowski, 2015). In my opinion, the topic regarding instruction and training emphasis in mental health assessment, while important, is a separate professional issue from testing practices and test usage patterns. In fact, there is copious literature on the disconnect between training and practice in clinical/ professional psychology. An examination of the most recent data on this nexus regarding assessment indicates that only 7 of the top 10 tests taught in clinical programs (see Ready & Veague, 2014) rank among the top 13 tests used in psychological practice (see Wright et al., 2017). This disparity would be greater if compared to assessment practices of mental health counselors (e.g., Peterson et al., 2014). Put simply, emphasized tests in clinical training are not necessarily a direct function of popular tests used in professional practice.

Motivation: Why the BGT? As a proponent of assessment psychology, I have always found it quite revealing that disparaging criticism of individual psychological tests/measures seems to always gravitate toward projective methods/tests. For example, Garb (1996) rendered an incisive 'moratorium' on the Rorschach. Such derisive commentaries have found a receptive audience (Garb's condescending article has now garnered over 100 citations in Google Scholar & 80 in PsycINFO). Interestingly, the recent national survey of practicing psychologists reported the Rorschach listed among the top 10 tests in terms of usage (see Wright et al., 2017).

Bennion et al. strongly urge deletion of the BGT from the clinical curriculum, largely based on the fact that there has been a diminution in clinical usage of this test. There is an extensive list of formerly popular mental health measures/tests that have lost their lofty status in assessment practice over the past 70 years (Frauenhoffer et al., 1998); for example, the 16PF, SCL-90, the Stanford-Binet, several million inventories, some projective tests). Why target the BGT? In my view, we will never see an article titled: "There should be a moratorium on teaching the… 16PF… the MCMI…the SCL-90… the Clock drawing…the Stanford-Binet…the Hand Test" or some behavioral assessment technique. So why select-out the BGT? Why does this assessment tool cause clinicians such angst?

Graduate faculty tends to emphasize assessment measures and techniques that they find useful and valid (but not necessarily popular) and, thus, to some extent tend to ignore APA review committee's recommendations on teaching areas of emphasis regarding assessment. Moreover, there is extensive variability on the spectrum of psychological tests that are 'covered' in assessment coursework (see recent survey data reported by Mihura et al., 2017). Surely, younger faculty tend to shun some traditional tests and focus on newly published measures or scales. Thus, despite published standards and guidelines on the clinical assessment curriculum, there is little academic consensus regarding training in assessment in graduate clinical/professional programs. The outcome of this variability in doctoral program assessment training has been rather predictable. There is now an extensive body of research findings confirming the dismay of internship directors on the lack of prerequisite preparation of psychology interns regarding familiarity with specific mental health tests (see Ready et al. 2016, for the most recent review). Such findings reflect the reality of pre-internship graduate education: aspiring students learn but a small fraction of the

knowledge and clinical experience needed for professional level competency in psychological assessment (Evans & Finn, 2017; Kaslow & Egan, 2017; Krishnamurthy et al., 2004). Admittedly, this variability is not necessarily a bad thing: The Buros Mental Measurements Yearbook (along with other scholarly testing compendiums) list over 50,000 available assessment instruments/ tests—obviously, students can't master them all.

So, allow professors to indulge students in some obscure or unpopular test. As novice, newly-minted practitioners, these former students will select for themselves the mental health measures and assessment techniques that they wish to master, probably via self-learning, attendance at workshops, or study of emerging research in the assessment literature. Accordingly, scholars should not fret over what tests are emphasized or 'covered' in some clinical training programs. Both the aspiring, novice student-clinician and the assessment field will survive, even though an individual test may gradually fall by the assessment wayside and be relegated as an historical artifact in clinical psychology.

Final thoughts:

To some degree, I do understand Bennion et al.'s position—Over the decades, the BGT has been severely critiqued as a cognitive and/or projective measure (see Norcross et al., 2006). In fact, its most vehement detractors reside in the field of neuropsychology. While survey-based data show that the BGT has been occasionally used by clinical neuropsychologists, a recent update noted scant reliance on the BGT (see Rabin et al., 2016). However, the BGT has been popular with practicing school psychologists (Hojnoski et al., 2006). With regard to training, Bennion et al. need to note that a recent national survey found that the BGT is covered in instruction by 73% of counselor educators (Neukrug et al., 2013). Interestingly, the BGT is still covered in 43% of clinical psychology programs (see Table 3 in Mihura et al., 2017). Moreover, many current internship programs continue to emphasize projective methods (Stedman et al., 2018).

Finally, Bennion et al. (along with other BGT critics) need to contemplate why the BGT continues to garner clinical research attention overseas; for example, with clinical psychologists in South Korea (Eom & Choi, 2018), neuropsychologists in Puerto Rico (Rodriguez-Irizarry et al., 2018), school psychologists (Oakland et al., 2016), and child clinicians. And not all this investigatory output is purely 'basic research'. Noteworthy, since my 2016 analysis, 10 articles on the BGT have been indexed in PsycINFO and 20 articles in the multidisciplinary database ProQuest. Thus, research on the test is clearly not moribund, and emergent research findings have both educational and clinical applications (e.g., Keppeke & Schoen, 2018).

I rest my case: In this rebuttal, I strongly offer a clarion call for a moratorium on moratorium-type articles in the assessment field, whether on the BGT or any other psychological test or measurement technique. In the context of scholarly discourse, there is a vast pedagogical difference between scholarly 'critique' and recommendation for the banishment of individual evaluation methods from academic instruction and training. Put another way… If some professor in a clinical training program provides instruction on the Luscher Color Test (most discredited in the Norcross et al. 2006 study), let them—perhaps the instructor may be trying to convey to students the importance and implications of color in personality assessment (e.g., the Rorschach) and the human experience. Clinical faculty should aspire to provide a comprehensive overview regarding the wide breadth of coverage spanning evaluation methods, so as to foster an eclectic introduction to psychological testing and assessment—specialization will eventually follow as advanced students transit from internship settings to post-doctoral training and beyond.

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Appraisal of Hurricane Harvey Versus Hurricane Irma: The Role of Empathy and Disengagement

Raymond Doe and Chris Piotrowski

Due to their temporal proximity (2 weeks apart), Hurricanes Harvey (Texas) and Irma(Florida) in 2017 provided a unique opportunity to examine the potentially differential views of impacted populations toward both tropical events. From a theoretical perspective, the issues of empathy versus detachment were the central focus of the study. The design utilized the semantic differential (SD) to rate the 2 dimensions of Evaluation and Potency. Participants were 66 college students enrolled at (Lamar University, Texas) a mid-sized university on the southeast Texas coast, who experienced a direct-hit from the full devastation of Hurricane Harvey. The results indicated that these students evaluated Hurricane Harvey significantly more negative than Hurricane Irma; moreover, they viewed Hurricane Harvey as more potent than Hurricane Irma. These findings demonstrate that populations who experienced empathy to Hurricane Harvey showed detachment to Hurricane Irma in terms of their evaluation, $t(63) = 3.4$, $p = .001$, $d = 0.42$, and potency, $t(63) = 5.6$, $p < .001$, $d = 0.70$, even though both hurricanes were of similar magnitude and caused similar devastation. The findings were discussed in the context of a social-psychological perspective, with a focus on the issues of empathy and moral disengagement.

Scientific research on the impact of natural disasters on human populations has proliferated since the devastation of Hurricane Andrew in south Florida in 1992 (Rodriguez et al., 2007).While much of the extant literature has a focus on major floods, tornados, and earthquakes, copious research attention has centered on investigating preparedness during hurricane watches and warnings, and in the detrimental aftermath of hurricanes. Not surprisingly, the vast majority of investigations have focused on the impact of hurricanes on a myriad of mental health conditions (e.g., PTSD) and psychological distress of human populations (Boasso et al., 2015; Joseph et al., 2014; Lowe et al., 2015; Piotrowski, 2012). Within the domain of hurricane studies, there has been active research conducted on the effects of hurricanes on children and adolescents (Grolnick et al., 2018; Hizli et al., 2009; McLaughlin et al., 2009; Roberts et al., 2010; Teasdale et al., 2013; Terranova et al., 2009; Vigil & Geary, 2008). In addition, largely due to convenience samples, investigators have utilized college participants who experience either hurricane threat (e.g., Piotrowski, 2015) or the full impact of tropical storms. With respect to college and university samples, the majority of these studies have focused on psychological morbidity factors or adaptive coping in the wake of major hurricanes such as Hugo, Andrew, Opal, Wilma, Ivan, Rita, and Katrina (Davis et al., 2010; Hirth et al., 2013; Lemieux et al., 2010; Munson et al., 2010; Pecchioni et al., 2011; Pickens et al., 1995; Piotrowski & Vodanovich, 2008; Plummer et al., 2008; Scott et al., 2010; Teasdale et al., 2013; Watson et al., 2011).

Cognitive appraisal of stressful events has been an active area of research in social psychology (e.g., Blaxton & Bergeman, 2017; Davis & Compas, 1986).Historically, hurricane studies tend to examine the onerous aftermath of these devastating storms and to a lesser extent on how individuals perceive or view these natural disasters from a social-psychological perspective. Legerski et al. (2015) studied children's cognitions regarding Hurricane Andrew. Thus, there has been limited research on attitudinal studies or studies with a qualitative design related to hurricane events. Piotrowski and Dunham (1983), utilized the semantic differential (SD) technique to study how children in the affected geographical area 'perceived' Hurricane Eloise which hit the central Gulf

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Coast in 1975. Findings pointed to either the use of mastery or denial related to respondents' connotations of the concept 'Hurricane'. Thus, there is a need for additional research with a focus on the views and perceptions of affected populations impacted by the devastation of major hurricanes.

Hurricanes in Texas:

Perhaps due to its extensive coastline or its geographical position in the western Gulf of Mexico (i.e., Caribbean hurricanes have further to travel, and thus increase in strength over warm waters, as they traverse the greater Gulf), the state of Texas has been hit by many strong hurricanes over the years. In fact, over 70 major tropical storms and hurricanes have impacted Texas since 1980;for example, Hurricanes Allen (1980), Alicia (1983), Gilbert (1988), T.S. Allison (2001), Rita (2005), Ike (2008), and Alex (2010). Several of these has caused major destruction in the greater Houston-Beaumont area (Alicia, Allison).More recently, Hurricane Rita, a Category 3 storm, left much devastation on the eastern Texas coastline, prompting official calls for the evacuation of Houston, and resulting in 113 deaths (see Borja & Callahan, 2008; Coco, 2017; Zhang et al., 2007).

Rationale for Study:

From August 25-28, 2017, the eastern coast of Texas was pummeled by a most unusual Hurricane Harvey, a Category 4 storm, where the Houston-Beaumont areas were inundated with extensive rain from the hurricane for almost a week, due a relatively stationary weather front. Such tropical events tend to exact more devastation from extensive precipitation than from wind damage. Residents of the Mobile Bay area on the central Gulf Coast had a similar experience with Hurricane Danny in 1998 (see Piotrowski & Armstrong, 1998). Just 2 weeks after Hurricane Harvey, the state of Florida was hit by Hurricane Irma, a Category 3hurricane, which went on to impact the Atlantic coastline of Georgia. Due to the temporal proximity of both hurricanes, the authors surmised that these two natural disasters would provide an ideal template to study whether impacted populations view 2 recent hurricanes differently based on their level of impact and personal experience related to both natural disasters.

From a conceptual perspective, researchers are particularly interested in studying deleterious effects across a series of disasters (e.g., North, 2010). Prior research has reported on multiple successive hurricanes (e.g., the myriad of hurricane that impacted Florida in 2005 in a short time span). Piotrowski et al. (1998) reported on the effects of Hurricane Erin and Hurricane Opal on the city of Pensacola, which struck the same area within a 5-week period.

Thus, the aim of the current study is to investigate empathy or detachment toward Hurricane Harvey and Hurricane Irma among college students. Specifically,

Research Question: 1. Would Texas students transfer their (negative) views of Harvey to that of Irma?

2. Would Texas students demonstrate experiential detachment towards Irma?

Method:

Location of study sample:

The city of Beaumont is located on the far eastern end of the Texas Gulf of Mexico coast and has been hit by several major tropical disasters – Hurricane Rita in 2005 and Hurricane Ike in 2008. Thus, this coastal area is very in tune with threats of tropical storms. Lamar University, with about 15,000 students, is located approximately 30 miles from the coastline.

Participants:

The participants in this study were66 college students, ages of 18 to 43 years, residing in Southeast Texas. Of these, 43 were female. All participants had been impacted by Hurricane Harvey to some extent. Two

participants provided incomplete responses and were excluded from the analysis.

Measures:

Semantic differential: The measurement of concepts and attitudes has been a central focus of research in social psychology. Osgood, et al, (1957) developed an ingenious and versatile measurement tool for assessing the connotative meaning of concepts known as the Semantic Differential (SD) technique. One of the unique features of the SD is its semi-projective nature, in that respondents do not know the modus operandi of determining the scaling procedure of the 3 scoring dimensions(Evaluation, Potency, Activity) when presented with a list of bipolar adjectives. This limits the possibility of response bias or disingenuous responding. There is copious literature, based on factor analytic methods, that support the conceptual structure of the SD and its use in both basic and applied research (Piotrowski, 1983; Piotrowski & Guyette, 2010; Sherry & Piotrowski, 1986; Snider & Osgood, 1969). Moreover, prior research studies have applied the SD in the study and appraisal of traumatic stressors (Biyanova, 2005; Piotrowski, 1985).

The authors developed a brief survey form that reported on several demographic variables and experience with hurricanes. A SD instrument was constructed and comprised of 14 bi-polar adjective scales, rated on a 7-point scale; four measuring the Evaluation dimension (Fair-Unfair, Good-Bad, Friendly-Unfriendly, Pleasant-Unpleasant) with higher scores indicating unpleasant or negative evaluation. Six bipolar adjectives were used to measure the Potency dimension (Heavy-Light, Large-Small, Thick-Thin, Hard-Soft, Strong-Weak, Tense-Relaxed) with higher scores indicating less potency. The 2 concepts rated were: Hurricane Harvey and Hurricane Irma. There were other bi-polar scales included as filler items, such as Happy-Sad and Long-Short, but were not included in the analysis.

Procedure:

The researchers circulated a flyer inviting participants to participate in a hurricane study after an Institutional Review Board's approval (IRB-FY18-31). Participants were also approached to complete the survey between about 6 Weeks to 2 months after Hurricane Harvey struck the Texas coast. Completed surveys were coded and analyzed using IBM SPSS Statistic version 24.

Results:

The results involve comparing the mean ratings on the Evaluation and Potency dimensions for the two target hurricanes. Table 1 shows the means and standard deviations.

Table 1:Means and SD for ratings on Hurricane Harvey and Irma

Dimension	Mean	SD	N
Harvey--Evaluation	23.27	4.54	64
Harvey--Potency	14.38	6.41	64
Irma--Evaluation	20.92	5.82	64
Irma-- Potency	20.89	9.47	64

First, a paired sample t-test shows that that Evaluation ratings were significantly higher for Hurricane Harvey than Hurricane Irma,$t(63) = 3.4$, $p = .001$, $d = 0.42$. That is, the participants' perception of Hurricane Harvey tended to be highly negative or unpleasant than Hurricane Irma. This effect size is small using Cohen's (1988) guidelines. Secondly, a paired sample t-test also showed that Potency ratings were significantly higher for Hurricane Harvey than Hurricane Irma,$t(63) = 5.6$, $p < .001$, $d = 0.70$. This effect size is medium according to Cohen's guidelines, indicating that the participants perceive Hurricane Harvey to be more powerful than Hurricane Irma.

In addition, we also conducted analysis by gender and by hurricane experience. In terms of gender, there was a tendency for female participants to rate the Evaluation dimensions

higher than males, and also rate potency dimensions higher than their male counterparts, but there were no significant differences for any of the dimensions on the target hurricanes. There were also no significant differences in terms of prior hurricane experience. Neither was there any significant correlation with the age of the respondents.

Discussion:

The physical and economic impact of natural disasters has been an intense and robust area of scientific study. Moreover, researchers in the mental health field have devoted extensive efforts in investigating the psychological impact of these disasters (Hoffman & Kruczek, 2011; Lowe & Rhodes, 2013; Lowe et al., 2014; Thompson et al., 1993). Interestingly, individuals who live closest to the epicenter of these natural disasters usually tell a different story regarding their experience than observers afar, hearing or watching the news unfold. In the current study, we focused on a unique occurrence of two hurricanes that happened in close temporal proximity, and to a large extent similar in terms of their potency and devastation. Both hurricanes have been labelled as a Category 3 or 4 storm. Using the semantic differential technique, the study found the presence of detachment to the hurricane that occurred far away in Florida but showed empathy with regard toward Hurricane Harvey in Texas. The construct of empathy which involves an individual responding to another person's experiences, has both cognitive and affective components (Davis, 1983). The present findings could be discussed within the cognitive component of perspective taking, i.e., students experiencing Hurricane Harvey have not adopted the psychological point of view of others experiencing the same conditions. This moral disengagement, according to Bandura (1999), may lead individuals to cognitively distort the nature of the natural disaster, externalizing liability, and thus minimize the negative impact (e.g., emotions) that usually accompany natural disasters when the disaster is not in close proximity. Such findings have implications for the study of empathy in the context of natural disasters (see Marjanovic et al., 2012; Yamamoto et al., 2015). Furthermore, research findings on 'psychological' disengagement have also been observed in areas such as sports, education, and politics (Heald, 2017; Menesini et al., 2003; Stanger, et al, 2012).For example, in sports, players could intentionally commit a foul, bully or even attempt to injure their opponents (Kavussanu, et al, 2014).

Finally, the current findings should be a welcomed addition to the literature, as prior research on this age group is somewhat limited. For example, Phillips and Herlihy (2009) studied college students' motivation in completing educational pursuits in the aftermath of Hurricane Katrina. Interestingly, Piotrowski (2015) found that only 8% of college respondents were concerned about academic issues like alterations to class scheduling and deadlines on required assignments. Moreover, loss of access to digital technology (e.g., iphones) undoubtedly is a major stressor for college-age cohorts and dramatically affects survivors during the wake of a hurricane (see Barak, 2010; Perez-Logo, 2004; Piotrowski, 2015; Schwartz, 2016). Central to elucidating our understanding of human response to potential calamity, more research is needed on critical factors such as disaster preparedness (Juric, 2006; Simms et al., 2013; Tanner & Doberstein, 2015; Wei et al., 2010) and evacuation, displacement, and relocation (e.g., Arlikatti et al., 2006; Blaze & Shwalb, 2009; Davis et al., 2010; Tuason et al., 2012) in college-age populations in hurricane-prone geographical areas.

Conclusions:

The findings of the present study should be considered tentative due to some potential limitations. First, the total sample obtained within the timeframe was small. A larger sample would increase the generalizability of the findings. In addition, only self-report data were obtained from the students after the

natural disaster. Observed actions by students and student groups to victims of natural disasters and empathic concerns demonstrated through benevolence may offer a complete and accurate appraisal of the reactions of affected populations under stress. Moreover, future research in ideal situations should compare samples from two populations that have experienced similar catastrophic events in close proximity using the same approach. Such a study would help corroborate the current findings and verify if similar outcomes would be present across populations experiencing natural disasters.

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Fund Manager Performance in Bull and Bear Markets: A Financial Risk Attitude, Stress Tolerance and Complex Problem-Solving Perspective

Joachim Birger Axel von Weissenberg

This study investigates how the personality factors of financial risk attitude, stress tolerance and complex problem solving predict investment performance in relation to rising versus descending market periods. The performance of 40 professional fund managers was measured over a total period of five years. In the rising market the three personality factors predicted 39% of the performance. In the descending market period the risk attitude and stress tolerance factors predicted 46.4% of the performance. The conclusions of the present study are as follows: a) Small differences were found in prediction strength between the personality factors of rising and descending markets. b) The financial risk attitude was the most important factor in both bull and bear markets. c) Stress tolerance is important in both periods, but especially in descending markets. d) Motivation for complex problem solving is important in rising markets. e) The three personality factors seem to be robust predictors of fund manager performance in all market phases.

Fund managers make investment decisions based on a predetermined investment strategy. They work in the financial sector managing funds that mainly contain equity, bonds, currency and property or a mixture of these on behalf of clients. They have considerable influence in financial markets because of the weight of money behind them. The work of fund managers is difficult due to constant uncertainty and large shifts between rising (bull) and descending (bear) market phases. From a national and global perspective, fund managing is an important profession. The amount of money held in worldwide funds increased by 54.49% between 2007 and 2016 (2016: $40.4 trillion). Households owned 89% of overall US fund assets ($16.3 trillion) and actively managed funds constitute the most important type of fund. Hence, knowledge about the human factor that influence performance is essential. (Funds' facts, 2017).

The understanding of what characterizes a successful fund manager is fragmented. In a comprehensive manner, von Weissenberg (2017b) revealed the personality factors that determine the performance of professional fund managers. In his five-year fund performance study von Weissenberg (2017b) showed that three personality factors predict long-term fund manager performance: *financial risk attitude, stress tolerance and complex problem solving*. The three factors predicted 53.8% of the five-year performance. The high level of prediction can be partly explained by using both explicit (Personality Research Form, PRF, Jackson, 1997) and implicit (Zulliger[1], Uhinki, 1994; Zulliger, 1969; Wartegg, Gardziella, 1985) personality tests and integrating them into the three personality factors.

Financial risk attitude: In earlier studies, behavioral finance findings, regarding financial risk-taking, have shown that two types of financial risk attitude exist: those prone to risk and those averse to risk. Those prone to risk have been found to be overconfident and those averse to risk have been found to be conscientious. Both features have been associated with underperformance (Keller & Siegrist, 2006; Sages & Grable, 2010. Also see Barber & Odean, 2001; Oberlechner, 2004).

In his studies regarding fund managers personality in relation to performance, von Weissenberg (2017b) discovered that financial risk attitude was the most predicting personality factor concerning performance

[1]Exner (1991, 1993), Comprehensive System

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(Adj R^2= -.309, p< .000). The financial risk attitude factor measured levels of independency vs. conformity. This means that those with high scores were more dependent and conformist, whilst those with low scores were more independent and non-conformist. Two high dependent attitudes were found: conscientiousness and overconfidence. Conscientious people place great value on feelings of control and this promotes increased attention on the concrete world. The need to control and to focus on the concrete is shown in the financial realm as an excessive fear of losing money. An excessive fear of losing money is connected to risk aversion.

The other dependent attitude was overconfidence. Those who are overconfident are dependent on how he/she is perceived by a reference group. Overconfidence has been found to be related to extroverted forms of social ambition (Durand, et al, 2013), which can lead to dependency on supposed acceptance and appreciation from a reference group. Group processes have been connected to homogenization and the submergence of individuality and heterogeneous qualities (Le Bon, 1896/2002). Herding refers to investors who conduct group think, and group feel in relation to increased homogenization and dependency on other people (see Tuckett, 2011).

An independent financial risk attitude was also revealed. Von Weissenberg 2017b (p. 123) states: “The third category…an independent attitude to risk can be described as being more inward looking, focused, analytic…and are guided by a mature character that actively contemplates different alternatives, rather than reacting to outer or inner urges.” Von Weissenberg (2017b) has shown that fund managers with more independent risk attitude over perform, whilst, on the other hand, highly conscientious and overconfident individuals underperformed in a five-year performance study.

Stress Tolerance: In his studies regarding fund managers’ personality in relation to performance, von Weissenberg (2017b) found that stress tolerance was the second strongest personality factor that can predict performance (Adj R2= .187, p < .05). Stress tolerance is a complex phenomenon. Tolerance of stress or distress has been studied from different viewpoints, such as health (Zvolensky, et al, 2011), the environment and crowding (Baum & Paulus, 1987) and work and military performance (Driskell & Salas, 1996; Hancock & Szalma, 2008). The present study is interested in whether stress tolerance loads are different in relation to performance in bear and bull markets.

Concerning the tolerance aspect of distress tolerance,von Weissenberg 2017b show that the ideal level of tolerance of distress is a high in the investment field. The key problem in relation to possessing a low tolerance of distress is that individuals tend to respond and self-regulate in a maladaptive manner. Isen (2000) has shown that a positive mood increases cognitive flexibility, whilst it has also been demonstrated that anxiety (a bad mood) makes decision-making more narrow and rigid (Gardziella, 1985). Von Weissenberg (2017b) found that fund managers who were more tolerant of stress were did possess more flexibility regarding decision-making.

Complex Problem solving: Complex problem solving (CPS) has attracted increased attention in recent decades in many scientific fields, such as education (Sonnleitner, et al, 2014), life satisfaction (Eysenck, 2000), work performance and expertise (Nokes, et al, 2010; Schmidt & Hunter, 2004).Furthermore, complex problem solving has been found to relate to reasoning (Wustenberg, et al, 2012) and has been studied in relation to expertise and novice decision making in economical settings (Dew, et al, 2009), In such settings, experts were found to frame decisions in a dramatically different manner than novices. According to the results from studies from several domains, experts tend to categorize

problems based on underlying principles with a deep level of abstraction, whereas novices categorize problems based more on superficial features (Nokes et al., 2010). More complex levels of problem solving has been found to correlate positively to five-year professional fund performance. In his studies regarding fund managers' personality in relation to performance, von Weissenberg (2017b) found that complex problem solving was the third strongest personality factor that can predict performance (Adj R^2= .191, p< .05). This finding supported earlier results that demonstrated that cognitive processing is the best way to avoid harmful situations (Exner, 2000).

Bull and Bear Markets: Financial markets are cyclical by nature and, in this sense, they resemble economic cycles (Blancard, 2008). A rising financial market is called a bull market and a descending financial market trend is named a bear market. A bull market is typified by a sustained increase in market share prices. In such times, investors have faith that the uptrend will continue. Usually, a country's economy is strong and employment levels are high. In many senses, rising and descending market trends represent opposite phenomenon (Prechter & Parker, 2007). In a bear market, share prices are continuously dropping. This results in a downward trend that investors believe will continue, which, in turn, perpetuates the spiral. During a bear market, the economy and company profits will normally slow down and unemployment will rise as companies begin laying off workers. The sentiment (mood), expectations and confidence levels are negative in bear markets and positive in bull markets. Olson (2006, p. 195) states:" A number of empirical studies have found that mood influences reactions to risk … people in a positive mood perceive choices as less risky, and the likely outcomes as more favorable. They are therefore more willing to take risks. Descending markets have been dominated by a depressive and/or anxious affect (Cheung, 2010). Conversely, individuals in induced depressed moods are significantly more conservative and less willing to take risks. Negative news associated with a descending market has been found to have a stronger impression on people than favorable information related to rising markets (Skowronski & Carslton, 1989). This is probably due to evolution and survival (Nguyen & Claus, 2013) and supports the prospect theory (Kahneman, et al, 1991), which asserts that individuals respond more intensely regarding unfavorable changes than to those of a comparably favorable magnitude.

The purpose of this study is to examine if the three personality factors introduced in von Weissenberg (2017b)—financial risk attitude, stress tolerance and complex problem solving—are loaded differently in rising and descending markets.

Hypothesis 1. Financial risk attitude, stress tolerance and complex problem solving is associated with higher performance in both bull and bear periods.

Hypothesis 2. Stress tolerance is a stronger predictor of a bear market than a bull market.

Method:

The same method and participants were used in the present study as in von Weissenberg (2017b), which should be referred to for a more detailed description.

Participants:

Forty-five subjects initially underwent the test battery. Of these, 37 fund managers were accepted in the rising market and 30 in the descending market. The 30 fund managers that participated in the descending market were the same as in the rising period. The only reason for non-acceptance in the final analysis was insufficient general fund data. The main causes for this insufficiency were the following: 1. A lack of officially-listed fund management data. 2. An insufficient management period (less than a year), or an inadequate amount of decision-making (< 40%) regarding the funds.

Measures:

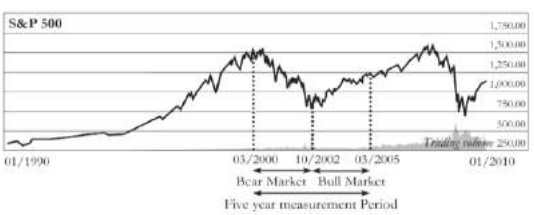
Fund Performance:

In the present study the information about the fund(s) managed by a fund manager were collected by Eufex Ltd. (a Finnish equivalent to Morningstar), which is an impartial company that delivered risk-adjusted Z scores (Sharpe) that were calculated by the following formula:

> Eufex efficiency = (Sharpe Fund measure – MEAN (Sharpe measure)) / MEAN STANDARD DEVIATION (Sharpe measure). The performance measure was calculated after transaction costs.

The period of performance evaluation started in March 2000 and ended in March 2005. The descending period of 31 months began on March 24th 2000 and lasted until October 10th 2002. The ascending period of 29 months stretched from October 10th 2002 until March 24th 2005, according to the general development of Standard & Poor's 500 (S&P[2] 500). The final mean fund governing time for the rising market period was 26 months and 17 days (two years, two months and 17 days), whilst in the descending period it amounted to 25 months and 18 days (two years, one month and 18 days).

Financial Risk Attitude, Stress Tolerance and Complex Problem solving: In formulating the three personality factors, two personality tests were used to measure implicit motives (Zulliger and Wartegg) and one to measure explicit traits (Personality Research Form (PRF) von Weissenberg, 2017b). The utility, validity and reliability of the psychological tests can be found in von Weissenberg (2017a). The financial risk attitude factor is further clarified in the following paragraph and more details concerning the stress tolerance and complex problem-solving factors can be found in von Weissenberg (2017b).



[2]March 24, 2000: The S&P 500 index reaches an all-time intraday high of 1,552.87 during the dot-com bubble (S&P 500, 2018).

Financial Risk Attitude: The financial risk attitude factor measures personal autonomy and independence. The financial risk attitude has four sub categories that are all related to independence or freedom. 1. *Conformity*: stereotypic (X+, Zulliger), ordinary (Fq+Fqo:FquFq-, Zulliger) and popular (P, Zulliger). Conformity impairs independence by being focused on the collective and normative. Stereotypical, popular and ordinary all represent collective group think instead of its opposite: un-normative and original individual thinking (Exner, 1993; Janis, 1982). 2. *Conscientious* variables from the Personality Research Form (PRF): order (Or, PRF) and cognitive structure (Cs, PRF). Cognitive structure and order place an emphasis on the control of an individual's surroundings, which can have an impairing effect on the freedom to experience emotionally conflicting situations. Conscientiousness is related to the need for control and the need for clear structures. Order (PRF) was found to correlate to aggression (PRF) ($r = .352$, $p < .05$). This could be interpreted as a rigid tendency to force things into control and order and to experience discomfort regarding ambiguous and ambivalent situations. 3. *Overconfidence* from the PRF variables of (dominance, Do, exhibition, Ex and achievement, Ac). Social ambition and exhibition are extrovert variables that place an emphasis on how prestigious one is perceived to be in the eyes of a social reference group (popular and stereotypic, Exner, 1993). High scores mean the collective is emphasized, which is the opposite of individuality and independence. The achievement variable was more of a measure of a strain type of ambition, which is not seen

as an ideal in the investment setting. The ideal ambition is more a natural tendency to perceive the "big picture" as measured by the W:D (Zulliger) variable that is utilized in the present article as a complex problem-solving factor (von Weissenberg, 2017a, 2017b). 4. *Force and aggression*: The strength of a drawing line (Wartegg) and aggression (Ag, PRF). This variable measure psychological compulsion and its opposite is cautious or freedom. Financial trends are global phenomena that "live their own life". Trying to aggressively force something to happen from the individual perspective is "impossible" and contraindicative from a performance viewpoint.

Independence is enhanced by low scores in all the four sub categories. High scores are contraindicative to independence and are related to the large group defense of homogenization of individuality and creativity (Turquet, 1975), which can lead to group think and group feel (Tuckett, 2011). Group think, and group feel are related to herding, which has been found to cause sentiment driven behavior and mispricing in financial markets (see also Prechter& Parker, 2007 and Shiller, 2000, 2005)

Stress Tolerance: The stress tolerance factor measured both a tolerance aspect and a stress or anxiety aspect. An individual is more vulnerable to be overloaded by new stressors if he/she is more prone to stress and higher levels of anxiety. The tolerance aspect measured ego strength, such as self-confidence, identity and the ability to endure ambiguity (von Weissenberg, 2017b). Self-confidence and sense of identity have been observed to be important factors in a person 's self-conception. Incoherence in self-concept easily leads to greater fluctuation in personality and has been shown to increase daily stress (Diehl & Hay, 2010). A better sense of identity and self-confidence have been found to protect against non-adaptive anxiety and stress impulses (Tähkä, 1993).

Complex Problem Solving:The complex problem-solving factor concerned different aspects of implicit cognitive processing. The factor measured an innate motivation to solve cognitively complex questions. Those individuals who loaded high on the factor have a natural tendency for complicated thought processes. The following cognitive processing aspects were favourable vs. unfavourable. 1. Big picture thinking (favourable) vs. attention to detail (unfavourable). 2. Active decision style (favourable) vs. passive decision style (unfavourable). 3. Inner logic (favourable) vs. trial and error (unfavourable). 4. Complex perception and processing (favourable) vs. non-complex (unfavourable). More high-quality thinking leads to superior decision making in the complicated and abstract world of finance.

A regression analysis was conducted to study the predictions of the three factors in relation to rising and descending markets. The results of the regression analysis concerning the rising market are presented in Table 1 and the descending market in Table 2.

Results:

The Rising Market:

Table 1: Personality Variables Predicting Bull Market Performance (n =37)

Variables	Single Variables			Whole Model		
	Beta	*SE*	*Adj. R^2*	*Beta*	*Stderr.*	*Adj. R^2*
FinancialRisk Attitude	-.523	.084	.252*	-.445	.077	.400***
Stress Tolerance	.386	.007	.125*	.325	.006	
Complex Problem Solving	.393	.008	.130*	.234	.007	
+p<.10, *p<.05, **p<.01, ***p<.001						

The result of the regression analysis in Table 1 shows that three personality factors formed the final significant model: financial risk attitude, stress tolerance and complex problem solving. The Adjusted R square = 0.400, p< 0.001. The most important factor of the whole model was the financial risk attitude factor, which reflects the importance of making independent judgments and decisions. Higher independence probably helps to protect against influences from sentiment driven group think.

Stress tolerance was the second most important factor of the whole model. It indicates that investing is also a stressful occupation in an ascending market and that people differ in their personal capacities to handle stress. Stress will be further elaborated upon in the results concerning descending markets and in the discussion section of the present article. The complex problem-solving factor, which showed that thinking about the big picture and an active ability for cognitive processing helped in finding better investment objects. The results also show that cognitive processing has a more important meaning for performance in a rising period than during a descending period (see Table 2). This can be partly explained by the relatively calmer investment atmosphere of a rising market, which has the potential to provide room for deeper contemplation (Nguyen & Claus, 2013). Contemplation is related to picking high quality equity[3] with a higher potential to rise and presumably higher protection against drop in value.

[3]Selecting equities is related to buying undervalued and selling over valued equities. Undervalue is a financial term that refers to a security or other type of investment that is selling for a price presumed to be below the investment's true intrinsic value. An undervalued stock can be evaluated by looking at the underlying company's financial statements, in order to determine the stock's intrinsic value. Due to the fact that financial markets are also driven by irrational sentiment, there are no guarantees that this strategy works, especially in the short run. (Investment strategy, 2018)

Descending Market: The Adjusted R square of the descending market was 0.467, p < 0.001. The result of the regression analysis in Table 2 shows that two factors created the final model of a descending market: financial risk attitude and stress tolerance. The financial risk attitude factor was also the most important factor of the descending market period. Stress tolerance was the second most important factor and it showed a stronger relationship to the bear market than to the bull market. This can be understood in terms of "anxiety management" that is generally more stressful in a bear market period (Kahneman & Tversky, 1979; Nguyen & Claus, 2013). The complex problem solving factor was significant as a single factor, but not as part of the whole model. It can be interpreted that bear market anxiety and negative mood have the potential to generally decrease cognitive flexibility and thereby the effect of cognitive processes (Isen, 2000). This result could also reflect bear market reactions: equity prices decrease generally. This makes complex problem that is related to high quality equity selection less important. These topics will be further elaborated upon in the discussion section. No statistical variable mediation or moderation was found in factors in the present article.

Performance Consistency between Bull and Bear Markets:A paired t-test was executed to analyze performance in the two market environments to find out if fund managers performed consistently in the two market trends. The result of the paired t-test was (t= 1.849, df = 27, p < 0.010). This result can be interpreted as indicating that fund managers performed consistently in rising and descending markets. These results support earlier findings by Grinblatt and Titman (1992) and Porter and Trifts (1998), whereby fund managers performed consistently over a five-year period.

Table 2.Personality Variables Predicting Bear Market Performance (n=30)						
Variables	Single Variables			Whole Model		
	Beta	*SE*	*Adj. R^2*	*Beta*	*Std err*	*Adj. R^2*
Financial Risk Attitude	-.546	.030	.273**	-.523	.025	.467***
Stress Tolerance	.481	.034	.204**	.454	.028	
Complex Problem Solving	.372	.009	.108*			
+p<.10, *p<.05, **p<.01, ***p<.001						

Discussion of Results:

The results of the present study supported earlier research findings within behavioral finance that suggested a relationship between personality and investment performance (Durand,et al, 2008; 2013; Hunter & Kemp, 2004; Lauriola & Levin, 2001; Menkhoff, et al, 2006; Törngren, & Montgomery, 2004; Wong & Carducci, 1991).

As described in the introduction, ascending and descending financial markets represent each other's opposite in many ways. It was therefore the intuitive expectation that the three personality factors would load differently on the two opposing market periods.

The two hypotheses set in the introduction were both verified as true.

Financial risk attitude, stress tolerance and complex problem solving were associated with higher financial performance in both bull and bear markets, confirming hypothesis 1 as true.

The stress tolerance factor was a stronger predictor of bear markets than bull markets, thereby confirming hypothesis 2 as true.

Financial Risk Attitude: The financial risk attitude factor had the highest prediction value of the three personality factors in both rising and descending markets. This could be understood by the importance of an independent attitude in both market periods. An independent attitude was connected to a higher performance in both bear and bull periods. An independent attitude can be described as more inner-directed and analytic. Such an individual is less fixed in a one-sided risk attitude and has a character that can actively contemplate different alternatives. The results of the present study support earlier findings by Fillbeck, et al, (2005), who found that those with a clear preference for thinking (as opposed to feeling) had an increased tolerance of risk (EB, Exner, 1993). Inner-directed fund managers, who base their decision-making on inner logic, have a superior ability to be able to learn from experience and perceive the risk/gain relationship more realistically. Inner-directed individuals also have a greater ability to resist a collectivist normative culture that has been connected to sentiment-driven investments (Chui, et al, 2010). All the three personality factors but especially the financial risk attitude factor measured whether individuals were guided by inner or outer motivations This result supports earlier findings by Biais, et al, (2002), who found that investors who were able to self-monitor their decisions were less likely to place loss-making orders. Lowenstein (2006) found that successful fund managers are inner directed.

The risk attitude factor measured also two dependent attitudes: conscientious and overconfidence. Both attitudes under-performed in the present study supporting earlier scientific findings. First, conscientiousness, which has been related to being risk averse (Lauriola & Levin, 2001). Conscientiousness was also associated to normative thinking (von Weissenberg, 2017b[4]). Conscientious individuals have been

[4]Appendix B (von Weissenberg, 2017b)

found to be more anxious (Niitamo, 1999) and are more sensitive to perceive risk. Conscientious individuals are strongly dependent on order and a feeling of control over external reality, which makes them vulnerable to ambiguous (conflictual) or uncertain situations. They typically focus too much on details and become overly anxious about losing money in the short run. Secondly, overconfidence has been connected to a propensity to take risks (especially among men) (Barber &Odean, 2001; Oberlechner, 2004). The overconfident are motivated to impress other people[5] (Niitamo, 1999). This makes them dependent on the consensus normative viewpoint of a group, which is shown, for example, in financial markets as the will of the investing herd as embodied in the current market trend. Conscientious and overconfident individuals are overly dependent on the outer concrete world. The underperformance of conscientious and overconfident individuals can be understood as a difficulty to tolerate and profoundly understand e.g. that an equities fundamental value can be in sharp conflict with its market value (see Shiller, 2000, 2005).

Stress Tolerance: Higher stress tolerance was associated with better performance in both bear and bull periods. This factor was the second most important predictor of performance in descending and rising markets. The stress tolerance factor, however, was loaded more strongly to the bear market (Adjusted R^2= 0.204, $p < .01$)than the bull market (Adjusted R^2= 0.125, $p < .05$).The difference in weight can be partly explained by the findings, whereby bear markets have been characterized as being more dominated by a negative mood as people react to negative news more strongly than to positive ones (Nguyen & Claus, 2013), as people care more about a loss than a gain of equal magnitude (Kahneman & Tversky, 1979). This could also be one reason why the overall prediction level of the present study was slightly higher for descending markets than with those in ascendance. A fund manager, when faced with intense pressure from market trends, colleagues, employers, customers, the media etc., can maintain his or her decision-making capacity during a descending market and is able to outperform a fund manager who has trouble in dealing with such pressure. The stress tolerance factor also measured the ability to endure ambiguous situations. Those who were better able to endure ambiguity were also better able to tolerate stress. Moreover, their fund performance in rising and descending periods was also superior in the present study. These findings support the earlier conclusions of Bernstein, et al, (2009), who found that the ability to endure ambiguity correlates positively to tolerance of stress.

In a physical and social work condition study Von Weissenberg (2019) observed that fund manager performance was impaired in descending markets. This was especially the case in more crowded trading halls. The findings supported the general conclusion within environmental psychology that higher arousal (stress) levels in cognitive complex tasks have a detrimental effect on performance.

Complex Problem solving: The result of the present study shows that complex problem solving has a stronger correlation with a rising than with a descending market. As a single factor it loaded significantly to both periods. What is more, a positive but non-significant relationship in the whole model in the descending market partly confirms hypothesis 1. The reason why complex problem solving shows larger predictions for a rising market, and smaller predictions for a descending market, is probably related to the different nature of the trends. In a rising market there is a climate of elation, joy and prosperity. This positive mood easily gives the illusionistic impression of a carefree state. The present study probably shows that the psychological capability to differentiate between investment objects in rising markets becomes more relevant than in a descending market. This can be explained by the fact that more sophisticated cognitive functions become

[5]Extrovert Ambition (PRF, von Weissenberg, 2017b)

important in a rising market, where they are able to differentiate between equities on a more qualitative basis. Negative emotions that have been linked to bear markets have been found to decrease cognitive flexibility and thereby cognitive problem-solving effectiveness (Exner, 1991, 1993; Gardziella, 1985).

The favorable impact of active cognitive processing on investment performance can be understood by the fact that it assists in making a synthesis of a highly complex: economics - financial market - equity interaction. According to the results of this study, maintaining key emotional and informational aspects in a conscious state supports an undivided frame of mind, whereas a divided state of mind is counterproductive for financial decision-making (Tuckett, 2011). There are many factors that increase the pressure for a divided state of mind. Stress related to managing other people money, ambivalent risk/gain relationship, long time market irrationality etc.

Conclusions and Limitations:

There is increasing support for social mood or sentiment being a key moderator of financial trends (Prechter & Parker, 2007). Rising and descending financial market periods stand in contrast to each other in many ways (Akerlof & Shiller, 2010; Cheung, 2010; Prechter& Parker, 2007). A market period can last for a decade or longer (bull period, see Shiller, 2000, 2005), and hence it may be concluded that only certain types of characteristics are beneficial for a fund manager in a certain market phase (bull vs. bear). The present study has shown that there are only minor differences in the loading of the three personality factors. This can be interpreted as indicating that the three personality factors outline profound psychological features that are highly relevant in describing fund manager performance. Otherwise it could be difficult to explain how the same personality factors are able to consistently predict performance in such fundamentally contrasting market periods.

The two market periods seem to highlight problems of the specific market periods. In descending periods this entails anxiety contagion (Scherer & Cho, 2003; Zhu & Yang, 2008), which could, for example, constitute the need to restrict fund manager communication (see also von Weissenberg 2017b, 2019), as negative emotion usually spreads more rapidly (Shefrin&Statman, 1985). Both market periods accentuate the need to foster independent thinking, as experts have been found to herd if they are able to communicate (Kargin, 2003). Independent thinking could be enhanced by supporting individual decision-making in company policy and in the overall setting (architectural, social, cultural etc.) of decisions and processes (see von Weissenberg, 2019). Future research could explore if the three personality factors are a robust predictor of performance among fund managers and financial analysts' or even more: a general factor that is able to predict expertise decision making under risk and uncertainty. The limitations of the present study concern the number of fund managers who were consulted. It was not possible, however, to test more fund managers in a small country (Finland).

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Fibromyalgia, Low Back Pain, Osteoarthritis, Myofascial Pain, and Complex Regional Pain Syndrome: Predominant Assessment Measures in Research

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Comprehensive evaluation of pain, particularly the confounding influence of somatoform co-morbidity, is perhaps one of the most perplexing challenges faced by practicing clinicians (Bruns & Disorbio, 2015; Flor & Turk, 2011). Moreover, the assessment of pain populations is a highly prolific clinical area, characterized by a vast body of emerging research (Gatchel et al., 2017; Piotrowski, 2019).But where is the practicing mental health clinician to turn in identifying the major pain assessment instruments applied to presenting patients with an identifiable, specific pain condition? Thus, the aim of the current study was to identify the most prominent methods (i.e., measures, scales, inventories, tests) in the research literature, reported in studies with a focus on 5 specific pain complaints or pain states (fibromyalgia, low back pain, osteoarthritis, myofascial/myofascial conditions, and complex regional pain syndrome). In the current analysis, each of these 5 pain conditions/ailments was selected in a keyword search, limited to being mentioned in the Abstract of peer-reviewed articles. The PsycINFO search display offers a 'drop-down menu' that includes the category Tests & Measures which displays, in rank order, the most mentioned assessment instruments for the identified pool of articles. This procedure indicated that only 2 assessment methods (i.e., the Visual Analogue Scale and Hospital Anxiety & Depression Scale) ranked among the top 10 instruments across all 5 pain conditions. The Beck Depression Inventory (BDI) was among the top measures in 4 of 5 of these pain disorders which points to the central importance of assessing the state or prevalence of depression in pain patients. Perhaps reflecting the importance on the evaluation of general health status, the analysis confirmed the popularity of the SF-36 Health Survey across 4 of 5 of the pain conditions. Furthermore, general pain status as assessed by the McGill Pain Questionnaire (MPQ) was noteworthy in 3 of the 5 conditions (Low back pain, Complex regional pain syndrome, Myofascial/Myofascialpain). These results indicate that researchers consider screening scales and co-morbidity factors that reflect mental health (i.e., psychopathology) as critical factors to the assessment process in the overall evaluation of pain samples. The findings show that specifically-designed measures, which are adapted for individual pain conditions, are a main component in the evaluation of pain (e.g., Fibromyalgia Impact Questionnaire, the Western Ontario & McMaster Universities Osteoarthritis Index, and the Arthritis Self-Efficacy Scale). Other measures such as the Oswestry Disability Index, the Roland-Morris Disability Questionnaire, and the Health Assessment Questionnaire are among the most relied upon and popular measures evident in pain research. Overall, researchers tend to focus more on the direct and immediate impact of pain on quality of life and overall health status than on mental health vulnerabilities of chronic pain per se. Future research would benefit from the further development of disorder-specific assessment tools targeted for pain evaluation.

Clinical somatic pain and related somatoform comorbidity are ubiquitous human experiences and, thus, the focus of extensive basic and applied research endeavors (Marchand et al., 2014; Molton & Terrill, 2014; Stankewitz et al., 2018; Turk & Gatchel, 2002). Moreover, pain conditions and disorders have held a prominent designation as a major public health concern (Gaskin & Richard, 2012). Based on the multidisciplinary nature of pain, the 'Biopsychosocial' paradigm has been well-integrated into modern clinical practice and theoretical schools of thought in the healthcare field (Adams & Turk, 2018; Deer & Ray, 2015; Eisenberger, 2012; Flor & Turk, 2011; Gatchel et al., 2007; Gatchel & Turk, 1999; Riva et al., 2011).

In mental health settings, complaints regarding pain or experience of chronic pain are a common and highly prevalent symptom presented to the practicing clinician (Gaskin & Richard, 2012; Jensen & Turk, 2014). Thus, it follows that the area of pain assessment continues to be a prominent topic of scholarly investigation in the health care field (Dansie & Turk, 2013; Epker, 2013; Gatchel et al., 2017; Gatchel & Weisberg, 2000; Turk & Gatchel, 2002; Turk & Melzack, 2011).Moreover, the evaluation of pain is a central feature in the

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study of pain across a multitude of clinical disciplines (medicine, rehabilitation, psychology, nursing, quality of life, and public health) as well as a burgeoning investigatory area of scholarly research.

Thus, it is expected that a comprehensive evaluation of the 'Pain' patient would include a wide spectrum of assessment measures and clinical scales across a myriad of health disciplines (Gatchel et al., 2014, 2017; Hartzell et al., 2016; Piotrowski, 2007; Trahan et al., 2017). At the same time, practitioners need to rely on specific assessment instruments which are targeted for designated health or medical conditions (e.g., Finkelman et al., 2015; Turk &Melzack, 2011). Yet, there is sparse literature that informs the clinician on the key measures (i.e., scales/inventories/questionnaires) that best inform the comprehensive assessment of the patient presenting a specific pain condition. In a seminal survey study of health psychologists, Piotrowski and Lubin (1990) identified the most relied upon pain assessment measures (McGill Pain Questionnaire, Coping Strategies Questionnaire, Psychosocial Pain Inventory). Years later, Piotrowski (1998) reported on the most frequently used tests by clinicians in the pain field (top ranked): the MMPI (all versions), the Beck Depression Inventory, McGill Pain Questionnaire, SCL-90, the Multidimensional Pain Inventory, and the Millon MCMI. More recently, Piotrowski (2019), in a bibliometric analysis of the extant research literature, identified the top 100 assessment measures used by researchers in pain studies.

Today's practicing clinicians and mental health professionals are frequently presented with rather complicated cases centered around various pain-related conditions. Moreover, projective techniques are not the instrument of choice in the evaluation of pain patients (Piotrowski, 2017).Thus, where is the practicing mental health clinician to turn in identifying the major pain assessment instruments applied to presenting patients with an identifiable health condition? To that end, the aim of the current study was to identify the most prominent methods (i.e., measures, scales, inventories, tests) in the research literature, reported in studies with a focus on 5 specific pain complaints or pain states (fibromyalgia, low back pain, osteoarthritis, myofascial/myofascial conditions, and complex regional pain syndrome). These health conditions were selected based on the extensive body of research on these 5 maladies in the extant scholarly literature (e.g., Bot et al., 2013; Grelsamer & Loebl, 1996;Selten et al., 2018; Tarescavage et al., 2018; Vendrig et al., 1999; Zautra et al., 1995).

Method:

This study applied a bibliometric approach regarding methodology (Aria & Cuccurullo, 2017; De Bellis, 2009).In fact, this type of analysis has been applied in prior research investigations on pain states (e.g., Alonso et al., 2007; Piotrowski, 2014). The key challenge was to obtain a listing of the major evaluation tests and scales used or noted in research studies for the 5 pain-related conditions. Traditionally, investigators have utilized systematic reviews of the extant literature in identifying key instruments with high visibility in research (e.g., Epkar, 2013; Piotrowski, 2018, 2019; Zijlema et al., 2013). For the current analysis, a search function in the database PsycINFO was applied that identified the most prominent assessment instruments for a specific search. In the current analysis, each health condition (Fibromyalgia, Low back pain, Osteoarthritis, Myofascial or Myofacial pain, Complex regional pain syndrome) was introduced in a keyword search, limited to being mentioned in the Abstract of articles. The search output was then limited to only peer-reviewed articles. The PsycINFO search display offers a 'drop-down menu' that includes the category Tests & Measures which displays, in rank order, the most mentioned assessment instruments for the identified pool of articles. This approach provided a listing of the most frequently used assessment methods which were a major component of journal articles for

each pool of studies, over the years, on each of the 5 health conditions. While the measures may not necessarily be the focus of each article, all assessment approaches were important enough to the aim and design of studies to be noted in the Abstract. Thus, the bibliometric outputs for these analyses have a high degree of confirmatory reliability and verifiability.

Findings:

Table 1 displays, in rank order, the most mentioned or cited measures in the Abstracts of peer-reviewed studies indexed in PsycINFO, across 5 major pain conditions. Interestingly, only 2 assessment methods, i.e., the Visual Analogue Scale and Hospital Anxiety & Depression Scale ranked among the top 10 instruments across all 5 health conditions. This indicates that researchers consider screening scales and co-morbidity factors that reflect mental health (i.e., psychopathology) as central issues to the assessment process in the overall evaluation of pain samples in research designs (Bair et al., 2003; Lee et al., 2017; Okifuji& Turk, 2014).

Given that the Beck Depression Inventory (BDI) was among the top measures in 4 of 5 of these pain disorders, points to the central importance of assessing the state or prevalence of depression in pain patients. This clinical premise is supported by findings based on extensive prior research confirming the link between depression and/or anxiety and chronic pain (Amirova et al., 2017; Piotrowski, 2014; Sheng et al., 2017; Sorrell et al., 2003; Steiner et al., 2017; Yohannes & Caton, 2010). Moreover, the BDI has been found to be a predominant assessment tool, in both research and practice, across a myriad of both medical and mental health disorders (Piotrowski, 2017,1998; Piotrowski & Lubin, 1990).Confirming these clinical perspectives, several researchers suggest that common psychological features support the characterization of ‘pain personality’ in the clinical evaluation of many pain patients (Gatchel, 2005; Kennedy et al., 2011; Naylor et al., 2017; Zhang, 2002).

Perhaps reflecting the importance on the evaluation of general health status in pain patients, a perusal of Table 1 confirms the popularity of the SF-36 Health Survey across 4 of 5 of the pain conditions. Furthermore, general pain status as assessed by the McGill Pain Questionnaire (MPQ) was noteworthy in 3 of the 5 conditions (low back pain, complex regional pain syndrome, myofascial/myofascial pain). This finding corroborates the popularity and reliance on the MPQ reported in both clinical practice and research studies on pain (see Piotrowski, 1998, 2019). Interestingly, the Brief Pain Inventory was listed in only 2 of the 5 conditions (fibromyalgia, complex regional pain syndrome).

In addition, the current analysis shows that whereas researchers tend to focus on both general health and pain status across studies on pain, assessment approaches utilizing specifically-designed measures for individual pain conditions are a main component in the evaluation of pain. These include the Fibromyalgia Impact Questionnaire, the Western Ontario & McMaster Universities Osteoarthritis Index, and the Arthritis Self-Efficacy Scale. Noteworthy, this bibliometric analysis highlighted the emergent clinical focus on the issue of ‘Pain Catastrophizing’ (Edwards et al., 2006; Gatchel, 2017; Ziandni et al., 2018), noted in research on fibromyalgia, low back pain, and myofascial/myofacial pain conditions (see PCS, Table 1).

A number of measures listed in Table 1, such as the Oswestry Disability Index, the Roland-Morris Disability Questionnaire, and the Health Assessment Questionnaire are among the most relied upon and popular measures quite evident in the overall body of pain scholarship (see Piotrowski, 2019).Rather revealing, the critical impact of pain states on sleep disruption and sleep quality was noted in the current analysis; that is, the Pittsburgh Sleep Quality Index appears to be a central

component of the overall evaluation protocol in the assessment of some pain conditions.

Conclusions:

Since the PsycINFO search parameters applied in this study did not restrict timeframe of publication year, the current list of tests favors those assessment instruments that have been available and cited in the literature for many decades. Thus, more-recently published measures may exert their influence on researchers with the passage of time. Indeed, some other scales or indexes may have made the 'Top 10' list if the search methodology was restricted to articles published since the year 2000.

Several interesting observations should have implications for the area of pain assessment. First, despite the popularity of the MMPI and Millon inventories (Frauenhoffer et al., 1998), these broadband measures are used rather selectively in pain-related research(see Fishbain et al., 2001; Gatchel et al., 2006; Haggard et al., 2008; Piotrowski, 2018, 2019). Second, measures that tap suicide potential or cognitions were not evident in the current analysis. Perhaps, researchers tend to focus more on the direct and immediate impact of pain on quality of life and overall health status than on mental health vulnerabilities of chronic pain per se (Hall et al., 2011). Third, future research would benefit from the development of disorder-specific assessment tools that may make their mark in the emerging scholarly literature, such as the Low-Back Pain Questionnaire. Finally, bibliometric results regarding test/measure ranking would most probably vary somewhat if these analyses were conducted in more medically-oriented databases such as Medline or CINAHL. For now, the measures presented in Table 1 can be relied upon as an assessment reference guide for clinicians involved in the treatment of pain patients.

Table 1. Predominant Tests/Measures in Pain-related Research Studies in PsycINFO

Fibromyalgia	Low Back Pain	Osteoarthritis	Myofascial/Myofacial Pain	Complex Regional Pain Syndrome
Fibromyalgia Impact Questionnaire (n=299)	Visual Analogue Scale (n=306)	Visual Analogue Scale (n=133)	Visual Analogue Scale (n=44)	Visual Analogue Scale (n=70)
Visual Analogue Scale (n=287)	Oswestry Disability Index (n=94)	SF-36 Health Survey (n=93)	Beck Depression Inventory (n=13)	McGill Pain Questionnaire (n=44)
Beck Depression Inventory (n=178)	Pain Catastrophizing Scale (n=89)	Western Ontario & McMaster Universities Osteoarthritis Index (n=85)	McGill Pain Questionnaire (n=9)	Numerical Rating Scale (n=36)
Hospital Anxiety & Depression Scale (n=126)	SF-36 Health Survey (n=83)	CES-D (n=53)	Neuropathic Pain Diagnostic Questionnaire (n=5)	Radboud Skills Questionnaire (n=14)
SF-36 Health Survey (n=90)	Beck Depression Inventory (n=83)	Mini-Mental State Exam (n=37)	Hospital Anxiety & Depression Scale (n=5)	Beck Depression Inventory (n=12)
State-Trait Anxiety Inventory (n=67)	Hospital Anxiety & Depression Scale (n=78)	Hospital Anxiety & Depression Scale (n=36)	Pittsburgh Sleep Quality Index (n=4)	Neuropathic Pain Scale (n=11)
Pain Catastrophizing Scale (n=61)	Fear-Avoidance Beliefs Questionnaire (n=76)	Arthritis Self-Efficacy Scale (n=30)	SF-36 Health Survey (n=4)	Brief Pain Inventory (n=9)
Pittsburgh Sleep	Roland-Morris	Health Assessment	Global Self-	Hospital Anxiety

Quality Index (n=60)	Disability Questionnaire (n=76)	Questionnaire (n=27)	Assessment Scale of Improvement (n=3)	&Depression Scale (n=8)
CES-D (n=57)	Tampa Scale for Kinesiophobia (n=55)	Coping Strategies Questionnaire (n=25)	Pain Catastrophizing Scale (n=3)	
Brief Pain Inventory (n=54)	McGill Pain Questionnaire (n=50)			

Note: Values in parentheses ( ) indicate number of published articles.

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SIS-I Profile of PTSD Patients

Rachana Kumari and Anjana Mukhopadhyay

Somatic Inkblot Series (SIS) has emerged as a powerful procedure in projective psychology. It is based on the principles of projection and uses inkblots to interpret the responses given by an individual. The interpretation is further used to map the personality and psychodynamics. The SIS has become an effective diagnostic projective tool for the assessment of patients suffering from various psychiatric problems. The present investigation selected 25 high and 25 low trauma affected adult (18 to 45 years) patients, both male and female cases, from various trauma centers of Varanasi. The level of trauma symptoms was assessed with the PTSD checklist civilian version (PCL-C). The present study aims at delineating the diagnostic power of the SIS in PTSD patients. The results indicated that several indices and pathological contents of SIS-I were able to discriminate the groups.

SIS-I is a semi-structured projective diagnostic instrument and an adjunct to psychotherapy. It is based on the spontaneous, individualized responses to semi-ambiguous inkblot figures which elicit intra-psychic associations. SIS provides images in three forms- on cards, in a booklet and on videotapes. Altogether five forms have been evolved: SIS-I (20 cards), SIS-II Booklet 62 images, SIS-II Video, SIS-I Video, and SIS living images. The test has been administered on a variety of population: adults and children (Kumar &Singh, 2007); militants (Saldanha, 2002); managers and students (Singh & Dwivedi, 1998); normal, neurotics and psychotic patients (Pershad et. al., 1997) and clients with ADHD (Jain, Singh &Kumar, 2002). SIS-I has also been used on Schizophrenics, to measure their ego strength (Mahapatra et. al., 2009); for detection of invisible imagery in bipolar depression (Shyam et. al., 2009). It has also been used to study gender differences (Singh, et al. 1999), marital discord (Manickam & Suhani, 2014) PTSD (Cassell, 2006; Cassell, et. al., 1999, 2000; Cassell & Dubey, 2014) and somatic grief (Cassell & Dubey, 1996).

Traumatic experiences are terrible, very oppressive, startling and difficult to confront for anyone. It is an unexpected situation for which no human being seems to be prepared. These events cause strange, unusual, disturbing and generally incomprehensive reactions, even for the victim. The Post-Traumatic Stress Disorder (PTSD) is a psychiatric classification which integrates in a diagnosis of the symptoms that appear after a traumatic event. Traumatic symptoms that stay once the intensity of the acute symptoms diminishes are not enough to classify as PTSD though the real psychological state of the victim suggests the impact of trauma as unmanageable. PTSD is strongly associated with a wide array of physical health problems, (Boscarino, 2004; Hoge et al, 2007) and infantry soldiers' have reported lasting symptoms of fatigue and dizziness which could be attributed to PTSD and depression (Hoge et al., 2008).

Evidence suggests that PTSD symptom severity is related to seeking psychological help (Zlotnick et al., 2002; Boscarino et al., 2004). Of special importance to emergency mental health programs are the extreme stressor critical incidents, such as natural and man-made disasters and human perpetrated violence in the form of physical or sexual assaults. Frequently, these events result in psychological trauma (American Psychiatric Association, 1994; Flannery, 1994; Everly & Lating, 1995; van der Kolk, McFarlane, & Weisaeth, 1996) with its major and painful disruptions in psychological functioning. Unlike less severe critical incidents, these traumatic impairments do not necessarily pass with the closure of the critical incident but may continue as Posttraumatic Stress Disorder (PTSD), a state which will last until

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Key Words: Somatic Inkblots, SIS, PTSD

death, if it is not treated. Untreated trauma and PTSD may result in permanent disability, medical and legal expense, increased sick leave, increased industrial accidents, social and community disorganization, lost productivity, and intense psychological distress. The toll in human suffering is enormous and unacceptable.

Hypotheses:

a) The high trauma affected patients' group would score higher on different SIS indices i.e., A, AT, Sex, M, At, and Rejection as compared to their low trauma counterparts.
b) The high trauma affected patients' group would score lower on different SIS indices i.e., H, MT and T as compared to their low trauma counterparts.
c) The high trauma affected patients' group would score high on different SIS pathological contents i.e. pathological anatomy score, depression, hostility and aggression and paranoia compared to their low trauma counterparts

Methodology:

Sample: The initial sample of the present study was comprised of 84 subjects (both male and female) age ranging from 18 to 45 years. Patients admitted in hospitals/trauma centers (Apex Hospital, DLW, Varanasi, Trauma center, BHU, Varanasi and Apollo Hospital, Mehmoorganj, Varanasi) after facing some automobile accidents, explosions, fires, earthquakes, sexual assaults or other terrifying experiences and undergoing treatment for at least 6 weeks were considered for screening the cases. PTSD Checklist-civilian version (PCL-C) was administered on the total sample (N=84). Based on PTSD checklist, 50 trauma affected subjects were screened out in terms of intensity of symptoms i.e. high trauma affected and low trauma affected groups. Final distribution of group stands with the following sample size viz. high trauma (N=25) and low trauma (N=25).

Measures

PTSD Checklist-Civilian Version (PCL-C) (Weathers et al., 1993): The PCL is a standardized self-report rating scale for PTSD comprising 17 items that correspond to the key symptoms of PTSD. Respondents indicate how much they were bothered by a symptom over the past month on a 5-point scale, encircling their responses ranging from "1"not at all to "5" extremely. Internal consistency (Cronbach's alpha) for the entire scale was .94 (Blanchard et al., 1996).

SIS Projective Test (Dubey & Cassell, 1980): The test consists of 20 ink blot images, printed on white cards. Images provide enough obvious anatomical structures. Responses are evaluated both qualitatively and quantitatively. Four pathological contents of quantitative measures are pathologic anatomy score (PAS), depression (D), hostility and aggression (HAS) and Paranoia (P). On the other hand, SIS indices namely, typical (T), atypical (AT), sex response (SEX), movement response (M), anatomy response (At), and rejection (Rej) are assessed qualitatively. The correlations computed for content categories for human, animal, anatomy and most typical responses ranged between 0.71 to 0.92.

Procedure:PTSD Checklist-Civilian Version (PCL-C) was administered on the total sample of eighty-four subjects. Fifty trauma affected subjects were screened out based on standardized cut off scores. In the 17 items of the PTSD Checklist, response categories 3-5 (Moderately or above) were rated as symptomatic and responses 1-2 (below Moderately) as non-symptomatic. PTSD checklist used the DSM criteria for a diagnosis i.e. Symptomatic response to at least 1 "B" item (Questions 1-5), Symptomatic response to at least 3 "C" items (Questions 6-12), and Symptomatic response to at least 2 "D" items (Questions 13-17). Trauma affected subjects who fulfilled the criteria for the BCD categories of items only formed the clinical sample for the study. SIS projective technique was administered on both the group namely high trauma and low trauma affected patients.

Statistical Analysis:
Scores on each variable of SIS-I were converted into percent scores by taking total number of responses as denominator. Mean, SD and't' tests were used to analyze the data.

Results:

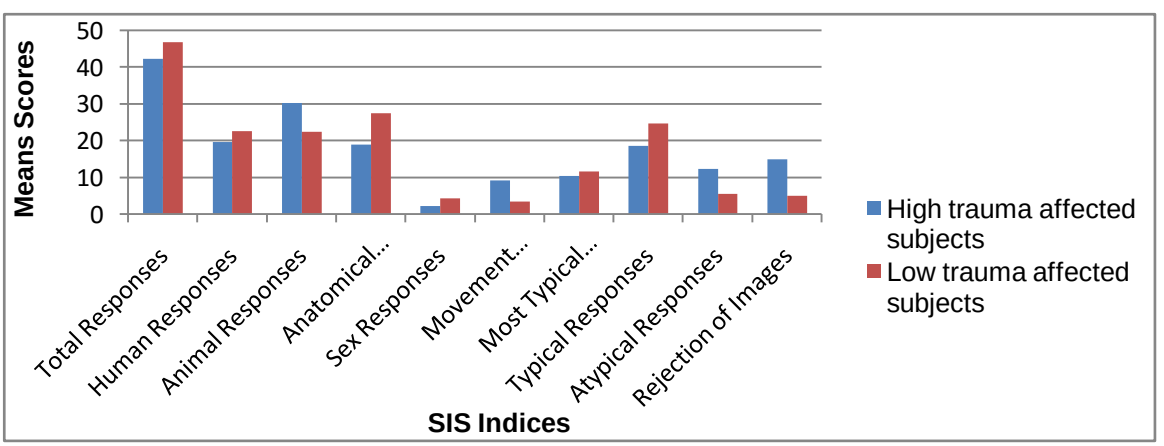
Table 1: Percentage Means, SDs and t-values of SIS indices obtained for high and low trauma affected subjects

Responses SIS indices	Trauma Affected Subjects				t-value
	High trauma (N=25)		Low trauma (N=25)		
	Mean	SD	Mean	SD	
Total Responses	42.16	30.33	46.76	18.80	0.64 NS
Human Responses	19.58	13.42	22.54	12.16	0.81 NS
Animal Response	30.28	13.59	22.32	8.32	2.50*
Anatomical Response	18.99	9.58	27.46	17.39	2.13*
Sex Response	2.19	3.38	4.35	5.60	1.65*
Movement Response	9.15	9.26	3.45	4.03	2.82**
Most Typical Response	10.44	9.11	11.65	5.00	0.58 NS
Typical Response	18.60	12.41	24.58	12.05	1.73*
Atypical Response	12.30	6.28	5.55	3.79	4.60 **
Rejection of Images	15.00	20.46	5.00	10.00	2.12*

*p<.05, **p<.01, NS=Not significant

Table 1 shows percentage means, SDs and t-values of high trauma affected subjects and low trauma affected subjects for the SIS indices. Percentage means are noticed to be significantly high for atypical response, animal response and movement response ($p<0.01$). Results also indicate high mean score for rejection of images ($p<0.05$) than low trauma affected groups. Anatomical response percentage mean reported significantly low score than their low trauma counterparts leading to rejection of hypothesis 1. A subsequent significantly low mean score may also be observed for typical response and sex response. Human response, most typical response and total number of responses means however could not differentiate between high trauma and low trauma affected group.

Fig. 1: Comparative bar diagram of percentage means of SIS indices for the high and low trauma affected Groups



Bar diagram (fig.1) has drawn the actual status of all the SIS indices in its comparative framework. Thus, the hypothesis 1 and 2 is mostly accepted.

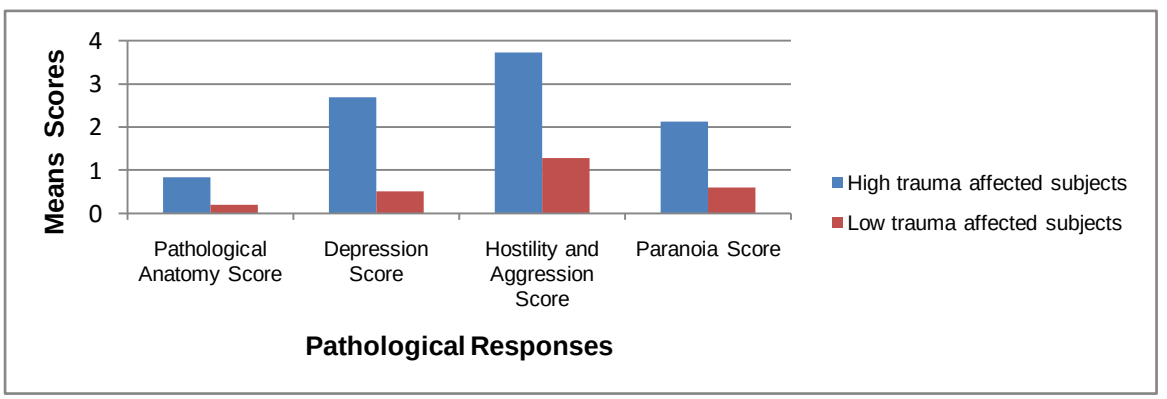
Table 2: Means, SDs and t-values of SIS Pathological Contents of High and Low Trauma Affected Subjects

Responses SIS Contents	Trauma Affected Patients				t-value
	High trauma (N=25)		Low trauma (N=25)		
	Mean	SD	Mean	SD	
Pathological Anatomy Scale (PAS)	0.84	0.85	0.20	0.40	3.40**
Depression Scale (D)	2.68	3.36	0.52	0.92	3.10**
Hostility & Aggression Scale (HAS)	3.72	3.28	1.28	1.27	3.46**
Paranoia Scale (P)	2.12	2.22	0.60	1.08	3.08**

**p<.01

Table 2 contains the means, SDs and t-value of the four pathological contents assessed in rating scales, obtained for the high trauma and low trauma affected group. High trauma group has been independently compared with low trauma group and the t-values have been reported. The responses obtained for the SIS scale were rated in terms of the factors from 0 to 3. The t-value confirms that high trauma affected group are significantly high ($p<0.01$) in pathological anatomy score, depression contents, paranoid ideation and hostility and aggression contents than their low trauma counterparts.

Fig. 2: Comparative bar diagram of means of SIS pathological contents for the high and low traumaaffected groups



The bar charts (fig.2) drawn for high trauma and low trauma affected group scores project that the pathological components viz. PAS, D, HAS and P are present in the high trauma affected group. Hypothesis 3 for SIS pathological contents thus stands in full support.

Discussion:

The result of the present study revealed that high trauma affected subjects are significantly high on animal response ($p<.05$) in comparison to the low trauma affected subjects. More animal responses are indicative of frustration, hostility, immaturity and primitive behavior. It shows the respondent is more comfortable with animals than human beings or psychologically immature and poorly adjusted with his environment. It is also indicative of low socialization (Dubey, 1982). Confirmation of hypothesis of higher animal response has outweighed high trauma affected subjects in comparison to their low trauma affected counterparts.

Rest of the indices narrates that in terms of atypical response, movement response and rejection of images, high trauma affected subjects have scored significantly higher among all these subscales. Atypical

responses are those of poor quality and with vague percept either in structure or verbalization. It is because perceived sensations are not processed and organized by secondary elaboration mechanism which involves ego functioning. Higher involvement of ego-functioning is linked with higher functioning of secondary elaboration that makes up poor, vague percept a more logical, coherent and meaningful percept. Therefore, a decline of atypical (AT) responses is an indication of sound ego functioning in low trauma affected subjects. However, according to Cassell and Dubey (2003)"the number of AT responses is found proportionate to the degree of psychological or psychiatric disturbance". Khromov et al. (2004) observed that the persons with increased emotionality recorded more responses of atypical category. Thus, high trauma affected subjects seem to be anxious with their emotional life. Significantly high rejection of images (Rej) by high trauma affected group indicates their blockage of thought and an inability to think properly. It has been noticed that people reject images, which depict certain percept related to their traumatized experience or underlying painful memory. Cassell (1990) stated that rejection of images shows thought blockage and an inability to think properly. Rejection is the result of an inhibition or blocking of thought, more often a shock phenomenon in most cases (Bohm, 1958). Images of inkblots linked to negative psychological experiences develop a negative valence in some individuals and these activate conflicts which become overwhelming and consequently the images are rejected (Verma & Singh, 2014).

The mean scores of movement responses were 9.15 in high trauma affected subjects as against 4.60 in low trauma affected subjects ($t=2.82$, $p<0.01$). The perceptions of actions in these blots are a psychological experience and thus indicate the creative energy of the individual. The projection of movement generally demonstrates active operation of dynamic forces in the individual. It indicates distribution of variant degree of unconscious psychic energy in different type of M responses as governed by ego-mechanism operational in the person.

Typical responses are commonly perceived responses by normal or healthy people on animage which have reported significantly low percentage for the high trauma affected subjects compared to their low counterparts. It shows the tendency of social withdrawal. The typical responses indicated common perception of the world. The gestalt projections of images are signs of positive health. A higher number of typical responses therefore, are linked with the state of healthy physical, psychological and social functioning of an individual. It is an index of good ego-strength that evaluates reality in its own perspective. It utilizes individual's physical as well as psychological resources with optimal functioning in a dynamic and coherent mode to adopt with reality, because the ego-strength is correlated with solving problems realistically instead of adopting/ escape/ withdrawal or aggressive mode of behavior. Failure to score substantial responses on these SIS indices provides an indication that high trauma subjects decrease their ego strength for which realistic coping is interrupted. Typical responses (T) are indicative of reality testing and healthy perception (Cassell & Dubey, 2003).

Anatomical responses reported significantly low mean score for the high trauma affected subjects than their low trauma counterparts leading to the rejection of hypothesis. High anatomical response of low trauma group indicates that they are preoccupied with their somatic symptoms and internal body organs. They have anxiety, poor self-image and concern about their health. In general anatomy responses indicate excessive preoccupation with bodily concerns without any critical physiological interpretation. Significantly low anatomical response of the high trauma group indicates that such patients are more affected psychologically than somatically.

Sex responses are scored for reproductive systems (both internal and external) and the

sensuous points of the body. Heightened anxiety and pathology are reported to be associated with heightened projection. No significant difference has been reported by high trauma affected group which indicates that they are not suffering from sexual anxiety or any psychic pathology as such.

Mean difference has not been reported statistically significant in most typical response, human response and total number of responses between high and low trauma affected subjects' projection measures. Most typical responses are indicator of coherent, logical thinking, and ability to keep up with the demands of the society. It may also be interpreted as a measure of ego strength and team concept. Insufficient human response by high trauma affected group indicates their deficient interpersonal relationships and a tendency of social isolation as well as failure to identify with others. The present study registers low mean score for human response which may be a transient phase for the affected patients and can be recovered from this social repercussion if exposed to a rejuvenating course of intervention. Total number of responses suggests imaginative capacity and functioning intelligence of the subject. A high number of responses indicates masked depression. Since the total numbers of responses are quite balanced among high and low trauma subjects it is hinting at no global pathology.

High trauma affected group reported highly significant value when measured in terms of SIS pathological contents. Pathological anatomy contents were found to be significantly high in high trauma affected group showing their excessive concern about physical health. Depression contents are also found to be highly significant substantiating dysphoric emotions in high trauma affected subjects which could be due to their poor health. Hostility and aggression contents are also registered significantly high in high trauma group. Paranoid ideation content was also reported to be significantly high in terms of mean difference. It indicates that high trauma group experienced an exaggerated sense of self- consciousness in social situation.

Conclusion:

The psychological distress associated with PTSD patients in different trauma centers was assessed in the study. Twenty-five (n=25) patients with high trauma and 25 low trauma subjects were screened using PTSD checklist Civilian Version (PCL-C). After that SIS-I was administered to measure the in-depth personality pathology through projective measure to resolve the stagnant life. The findings of the present study clearly demonstrated thathigh trauma affected subjectscan be differentiated from low trauma affected subjects in the terms of different SIS-I indices.

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Distress in Diabetes and Incidence of Depression in Middle Age

M. Mili and A.S. Raakhee

Distress in Diabetes may affect the physical as well as emotional wellbeing of the patient. The current study is to examine the relationship of Distress in Diabetes and incidence of depression in middle age. A sample of 100 diagnosed Type 2 diabetes (Males= 50; Females =50) were administered Distress in Diabetes Self rating Scale and Patient Health Questionnaire-9. Regression analysis was carried out to find the relationship between the variables. Results showed that Age and Distress in diabetes are strong predictors of Depression in Type 2 diabetes patients belonging to middle age.

Diabetes Mellitus is not a single disease but a syndrome consisting of different subtypes of Diabetes with hyperglycemia which happens due to insulin deficiency. Its prevalence is increasing rapidly and has already reached an epidemic proportion in urban India. Though diabetes Mellitus can be managed to an extent with lifestyle and diet changes, it demands a lot of effort and patience from the part of the patient. This can act as a major stressor and results in various psychological problems including depression. In low and middle income group, more than 80% deaths has been reported (Deepa et al, 2011). Type 2 diabetes can be prevented or the onset of it can be delayed by healthy diet, regular exercise and proper body weight. Being obese or overweight is found in about 90% patients of Type 2 diabetes (Barnett& Kumar, 2009).

Kerala is considered to be the “diabetes capital” of India with a prevalence of as high as 20%, double the national average of 8%. In a study on 20,000 subjects, the prevalence of diabetes in Trivandrum was 17% as compared to 15% in Hyderabad and 4% in New Delhi, 3% in Nagpur and Dibrugarh (Mohan et al, 2007). Other studies have shown a prevalence of 11-19% in men and 15-% in women with rural Keralites than urban dwellers (Ramankutty et al, 1999). This is in sharp contrast to national data that shows the prevalence of diabetes to be double in urban areas than rural areas. Only a fifth of the diabetics are treated and controlled. Considering the highest literacy rates as compared to other states in India, the prevalence rates and poor control of diabetes in Kerala makes this disease extremely dangerous which requires urgent actions.

Depression is often seen in patients with Type 2 diabetes. This interferes with the successful intervention of diabetes. People diagnosed with type 2 diabetes may experience a wide range of emotions, including fear, anger, depression, denial, and guilt. The impact of diabetes is seen in the physical, emotional and sexual aspects of life. Depression also causes macro vascular complications such as coronary heart disease, atherosclerotic vascular disease and ischemic heart disease. Depression has a major impact on the mortality rates in diabetes patients. Patients with both diabetes and depression are seen to have poor self-management in comparison with patients with diabetes alone. They are more likely to have higher cardiovascular risk factors like smoking, obesity, sedentary lifestyle, and uncontrolled hyperglycemia. They have higher macrovascular and microvascular complications and higher mortality rates. (Raval et al, 2010).

Perhaps the most dangerous aspect of diabetes and depression is that depression is often undiagnosed. Many symptoms of diabetes mimic those of depression leaving many primary care givers failing to recognize the underlying mental health issue of depression. Because the presence of depression in individuals with diabetes can increase the severity of diabetes getting a proper diagnosis of both diabetes and depression, it becomes critical in their management. The present study is an attempt: 1. To explore the relationship

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between distress in diabetes and incidence of depression in Type 2 diabetes and 2. To examine the relationship of gender and incidence of depression and age and incidence of depression in type 2 diabetes.

Methodology:

100 adults (50 males and 50 females) with Type 2 Diabetes between 40-70 years.of age participated in the study. Purposive sampling method was used in this study.

Procedure: The sample was selected from older adults aged 45 to 70 years. They were briefed on the study orally by a researcher before administering the questionnaires. Debriefing was done about the whole procedure. They were informed that the participation is voluntary, and they can withdraw from the study anytime if not interested. Participants wishing to preserve some degree of anonymity were asked to use their initials. In addition to the oral briefing, all the participants obtained written information about the study. Introspective report and feedback were collected and behavioral observations were made.

Measures:

Socio Demographic Questionnaire: Information including name, age, gender, education, marital status, family status, employment status were collected from the participants.

Patient Health Questionnaire-9: PHQ-9 was administered to assess if the participant has symptoms of depression. The PHQ-9 is a multipurpose instrument for screening, diagnosing, monitoring and measuring the severity of depression. The PHQ-9 incorporates DSM-IV depression diagnostic criteria with other leading major depressive symptoms into a brief self-report tool. PHQ scores ≥ 10 had a sensitivity of 88% and a specificity of 88% for major depression. In addition to good content validity, PHQ-9 had good 1-month test–retest reliability (r = .875) and internal consistency (Cronbach's α = .835). There was high convergent validity with the Beck Depression Inventory (r = .76; p = .001). The Malayalam translation of the Patient Health Questionnaire-9 was used.

Distress in Diabetes self-rating scale: This was developed by Andrej Kokoszka, University of Warsaw, Poland in 2008. The scale has demonstrated relatively good reliability (Cronbach's alpha = 0.81) and validity (showing Pearson's coefficients of correlation [r] with Beck Depression Inventory score, Depression Scale of Hospital Anxiety and Depression Scale and Hamilton Depression Rating Scale of 0.72, 0.68 and 0.68, respectively). The existing norms enable it to be used for the detection of depressive disorders in diabetic patients. (Kokoszka, 2008)

Statistical Analysis: Statistical analysis was carried out using SPSS (Statistical Package for Social Sciences) 21 version. Descriptive statistics were calculated. Regression analysis was carried out to find out the relationship between the variables.

Results:

The mean and standard deviation of the scores of the sample for PHQ were calculated to be 3.33 and 2.644; for DID were 4.42 and 3.511 respectively. The mean and standard deviation of the age of the sample were 59.31 and 7.143 respectively (Table 1). The correlation of the between the scores of PHQ and DID were.356. The correlation between PHQ scores and gender was .141 and between age and PHQ scores was -.260 .The adjusted R square computed as a result of regression analysis was .167 and the Durbin Watson was calculated to be 1.800. The standard error of the estimate was found to be 2.413 (Table 2). The F value was 7.633 and was found to be significant at 0.05 level.

Table 1 showing the mean and standard deviation of the scores of PHQ and DID of the sample

N=100	Mean	SD
PHQ	3.33	2.644
DID	4.42	3.511
Age	59.31	7.143

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Table 2 showing the results of Regression Analysis

R	R^2	Adjusted R^2	SE of estimate	Durbin-Watson
.439	.193	.167	2.413	1.800
a. Dependent Variable: PHQ, b. Prediction Variables: Age, Gender, DID				

Table 3 showing the correlations from regression analysis

Model	Unstandardized Coefficients		Stand. Coefficients	**t**	**Sig.**
	B	**SE**	**Beta**		
Constant	7.041	2.150		3.275	.001*
Gender	.422	.494	.080	.855	.395
DID	.248	.071	.329	3.503	.001*
Age	-.092	.034	-.248	-.2696	.008*

Table 4.Results of ANOVA

Model	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Regression	133.291	3	44.430	7.633	.000*
Residual	5558.819	96	5.821		
Total	692.110	99			
(a). Dependent Variable: PHQ, (b). Predictors: (Constant), Age, Gender, DID					

Discussion:

Diabetes is considered as a lifestyle disease which has major implications in the mental and physical health of a person. Several studies suggest that diabetes doubles the risk of depression compared to those without diabetes. The complications of diabetes become worse in the presence of depression in the patient. This is because depression leads to poorer physical and emotional functioning which makes the person less likely to follow diet or medication needed. The patient's wellbeing can be improved by treating depression with psychotherapy, medication, or combination of both (Frank et al, 1990).

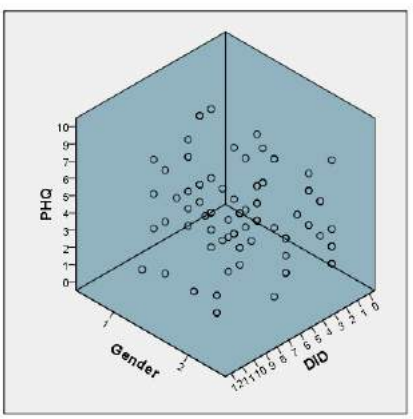


Fig 2 shows the 3D scatterplot of relationship of the variables

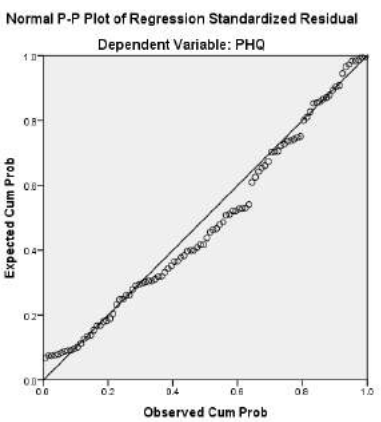


Fig 3 shows the normal P-P plot of regression standardized residual

The severity of the disease results in a lot of health complications like eye diseases, kidney diseases, high blood pressure, cardiovascular conditions etc. The distress in diabetes is caused by the stress experienced by the patients to manage the condition to avoid these health complications in the future. The distress may lead further psychopathology without timely interventions. So it is necessary to assess the wellness of diabetes patients to avoid this from happening.

Multiple linear regression model summary shows that adjusted R^2 of the model is .167 with the R^2 = .193. This means that the model

explains only 19.3% of the variance in depression but the relationship was found to be significant at 0.05 level. The Durbin-Watson d = 1.800, which is between the two critical values of 1.5 < d < 2.5. Therefore, it can be assumed that there is no first order linear auto-correlation in the multiple linear regression data. From table 3, it can be understood that only DID and age are significant predictors.Various studies confirm the positive correlation between depression and diabetes distress. The assessment of diabetes-distress and depression in research and clinical practice will be essential to identify high-risk patients with different mental health needs (Snoek et al, 2015). Diabetes related distress predicts glycemic control, perhaps by decreasing medication adherence. This worsens the condition of the patient and makes him more susceptible towards depression (Aikens, 2012).Age has a negative correlation with depression in the current study. Diabetes is traditionally considered as a condition of 'old age'. So, the earlier people are diagnosed with diabetes the higher the distress in diabetes (Wardian & Sun, 2014). Gender doesn't not predict the incidence of depression according to the current study. The P-P (Fig 1) plot shows that the points generally follow the normal (diagonal) line with no strong deviations. This indicates that the residuals are normally distributed and explains the linear relationship of independent variables with the dependent variable. The 3D scatterplot (Fig 2) displays a strong correlation among the variables.

Conclusions and future implications:

Distress in diabetes and age are significant predictors of depression in Type 2 diabetes patients. Gender is not a significant predictor of depression in type 2 diabetes patients according to the results of this study. Ithas not explored the role of individual differences like the personality of the patient in depression and distress in diabetes. Future research can be directed towards exploring this area. The study asserts the importance of understanding the level of distress in diabetes in the incidence of depression especially when people are diagnosed with diabetes in early middle age. A larger sample is expected to give more insight into the age differences in the distress associated with diabetes and its role in the incidence of depression.

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A Comparative Psychosocial Study of Aggression, Attachment Style and other Personality Correlates among Orphan, Destitute, Creche-attender and Normal Children

Rajasree Chakraborty, Manisha Dasgupta and Nilanjana Sanyal

Explorations into the personality correlates of children are frequent. The present research endeavor attempts a probing journey in terms of the variables of aggression (anger), attachment style, anxiety, and personality with 240 (60 in each of the four groups of orphans, destitute, crèche-attenders and normal control) children. The main objective was to locate differences, if any, between the sub-groups of children about the selected variables and their respective dimensions. Statistical analyses revealed significant profile differences between the samples. Orphan children have higher scores with respect to some dimensions of aggression, attachment, anxiety compared to normal controls. Personality indices in the form of significantly higher number of animal responses, movement responses, most typical responses, hostility and aggression and lesser number of atypical responseswere found in orphan children. Higher scores were found for destitute children with respect to state anger/feelings, state anger/expression, trait anger/temperament, trait anger/reaction, anger expression out and anger control compared to normal children. Destitute children were also found to score higher in attachment and in all the dimensions of anxiety than normal controls. They had higher mean scores as compared to normal children in certain indices of personality. Creche-attender children had higher scores with respect to state anger/ feelings, trait anger/ temperament, trait anger/ reaction, and anger expression-in compared to normal controls, and had highest attachment. Higher scores almost in all dimensions of anxiety except for O.C.D. were found in creche-attending children as compared to normal children. Creche-attending children scored higher in animal responses, anatomical responses, most typical responses and rejection responses than normal children. The present research findings are of much significance in understanding the personality profiles of different groups of children differing in their place of stay in the canvas of healthy development of personality to help design psychotherapeutic programs.

Childhood has been regarded as the “golden age” of a person’s life. Locke (1963) referred to the child as a tabula rasa, a blank slate, from which they could learn through experience and develop rationally into the adult world. Childhood is the only time when the mind is so free, when fairies are as real as fires, when fables are true, and reality is constantly invented. The world is a dream. It is the place where many seeds and notions are planted in us and watered with loving hands of our parents – most generally, our “significant others”. However, this fragile garden of childhood gets scathed and fragmented when the young child suddenly is thrown into a strange world with no biological caregiver to look up to due to myriad reasons. The inner self of the young soul weeps bitterly and searches frantically for a warm hand, a caress, a warm touch to ‘hold on’ to… Different folds of emotional deprivation consequently results.

Such studies of deprivation due to either neglect in the home or due to forced institutionalization have revealed that personality changes are an almost inevitable accompaniment (Coates et.al., 1972; Rutter, 1972). Children who are deprived of their parents are likely to experience severe emotional trauma when the basic source of security is removed, either by death or divorce (Hurlock, 1981). Glasser (2000) has reported that the child’s self-concept is “formed within the womb of the family relationships”. The dimensions of family interactions that are important for shaping the personality of children include the emotional tone of the family, the responsiveness of the parent to the child, the way control is exercised and the quality and amount of communication (Bee,

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Key words: aggression, anxiety, attachment style, personality

1997; Sanyal & Dasgupta, 2008). “Primal wound” in attachment bond with the primary caregiver often becomes very prominent among orphaned children (Main & Goldwyn, 1984). Attachment begets trust, which is, in turn, necessary for attachment. Verschueren & Marcoen (2005) proposed that “the child’s experience of abandonment causes him to mistrust the permanence of the present caretaker and to defend against further loss by distancing himself from her.”

With the basic preamble of the present study being laid down, the investigation purports to examine whether there is any significant inter-group difference among orphans, destitute, crèche-attender and normal controlswith respect to: aggression (anger) and its dimensions, anxiety and its dimensions, attachment style and personality and its dimensions.

Method:

The sample consisted of 60 children in each group (orphan, destitute, crèche-attender children) and 60 normal children living with both parents after matching them with respect to their age (7-11 yrs), sex, intelligence (‘average’ and above), family income for destitute, creche-attender, and normal children (below Rs.5000/- per month), mother tongue (Bengali), education (Grade I to V), residing in different orphanages, destitute homes, crèches and residential homes in Kolkata and surroundings, and duration of stay in any institution (at least 2 years for orphan and destitute children). Children with no history of psychiatric disorder, chronic physical illness and organic involvement were included in the study.

Tools Used:

1. State-Trait Anger Expression Inventory-2TM Child and Adolescent (STAXI-2TM C/A) by Brunner and Spielberger (2009) – to assess anger as a precursor to aggression;
2. The Security Scale by Kerns et al. (1996) – to assess attachment in middle childhood;
3. The Spence Children’s Anxiety Scale (SCAS) (Spence,1998) – to assess anxiety symptoms;
4. The Somatic Inkblot Series (SIS) (Cassell & Dubey, 2003) – to elicit intra-psychic associations.

All the tests were administered only to those children who possessed at least ‘average’ intellectual functioning onCPM (Raven et al, 1986). Purposive sampling technique was followed in the investigation.

Administration:

The psychological questionnaires were administered in a single session, in the presence of the assessor so that any clarification could be done immediately. It took roughly two hours. The sequence of administration of the questionnaires, did not follow any pre-determined sequence, except the CPM was given in the beginning and SIS at the end. The following instructions were given at the very beginning: “You will be provided with a few questionnaires one by one. Remember all the answers will be kept in confidence. Please do not hesitate in answering frankly. After you finish answering, kindly hand them over to me. If you have any difficulty, please let me know.” Each questionnaire was scored following the scoring methods. The Mean, SD, One-way analysis of variance and post-hoc Tukey test were carried out with the help of SPSS-version 16.

Results:

Significant group differencesexist about certain indices of anxiety such as Panic Attack & Agoraphobia, Separation Anxiety Disorder, Social phobia, O.C.D., G.A.D.; certain indices of personality namely Movement (M), Most typical (MT), Rejection of images (Rej.), and Hostility and aggression (HAS).

Table 1: Means, SD of the different groups (Orphan, Destitute, Creche-attender, Normal control) and F-values obtained from one-way analysis of variance (ANOVA) for the different variables and their respective dimensions

Variables	Groups								F-values
	Orphan (N=60)		Destitute (N=60)		Creche-attender (N=60)		Normal Control (N=60)		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
1. Aggression									
State-Anger(S-Ang.)									
a.State-Anger./Feelings	5.22	0.83	5.28	1.08	5.08	0.38	5.03	0.26	1.58
b.State-Anger./Expression	5.15	0.82	5.1	0.4	5.05	0.29	5.05	0.29	0.55
Trait-Anger(T-Ang.)									
c.Trait-Anger./Temperament	8.45	1.95	8.6	6.9	7.68	1.67	7.58	1.86	1.18
d.Trait-Anger./Reaction	10.2	1.98	10.18	2.16	9.65	2.08	9.43	2.27	2.00
e.Anger Expression Out(AX-O)	9.57	2.35	9.05	2.53	8.65	2.13	8.77	2.33	1.89
f.Anger Expression In(AX-I)	8.8	2.15	8.83	2.62	9.48	1.85	9.25	1.61	1.54
g.Anger Control(AC)	9.9	2.6	9.82	2.84	8.92	2.79	9.08	2.68	2.01
2. Attachment Style	50.47	6.53	50.55	5.36	51.07	5.6	50.13	5.65	0.27
3. Anxiety									
a. Panic Attack & Agoraphobia	4.98	3.25	5.95	3.26	3.4	3.27	2.65	2.55	15.32**
b. Separation Anxiety Disorder	7.22	3.49	7.43	3.46	6	3.87	5.48	3.17	4.6**
c. Social Phobia	5.93	3.74	5.05	2.77	3.03	3.05	2.82	2.73	16.5**
d. Physical Injury Fears	5.23	4.05	5.48	3.62	5.63	3.51	5.02	3.66	0.38
e. O.C.D.	6.2	3.97	5.98	3.3	1.77	2.26	2.22	2.73	35.83**
f. G.A.D.	6.3	3.21	6.37	2.2	4.03	3.23	3.75	3	14.85**
4. Personality									
a. Total number of responses (R)	63.05	3	62.6	7.5	62.05	4.26	63.33	4.43	0.76
b. Human responses(H)	20.62	4.51	22.23	6.65	20.3	5.82	21.4	7.2	1.25
c. Animal responses(A)	11.37	4.36	10.77	3.93	10.47	4.64	10.17	4.82	0.8
d. Anatomical responses(At)	8.1	4.75	8.82	14.87	9.23	7.11	7.97	6.52	0.26
e. Sex responses(Sex)	0.22	1.19	0	0	0.05	0.29	0.0333	0.18	1.46
f. Movement responses(M)	10.48	5.59	14.08	8.14	7.28	5.15	8.42	6.1	13.49**
g.Most typical responses(MT)	8.03	2.36	7.07	2.41	5.88	2.55	5.45	3.01	12.11**
h. Typical responses(T)	18.12	4.53	17.82	4.35	19.1	4.6	19.05	5.29	1.15
i. Atypical responses(AT)	36.57	6.27	37.72	8.2	37.05	8.23	38.88	8.25	1
j. Rejection(Rej.)	1.1	1.95	2.65	5.9	2.1	2.6	1.28	1.98	2.72*
1. Pathological Anatomy (PAS)	0.22	0.49	0.27	0.63	0.0833	0.33	0.22	0.61	1.33
2. Depression(D)	0.2	0.55	0.17	0.42	0.1	0.35	0.1	0.35	0.84
3.Hostility &Aggression (HAS)	2.23	1.65	3.03	2.75	0.68	0.97	1.77	1.93	16.16**
4.Paranoia(P)	0	0	0.016	0.13	0	0	0.05	0.29	1.37

Table 2: Mean difference obtained from Post-Hoc Tukey test showing the significance of the difference between the different study groups corresponding to selected variables and their dimensions having significant F values

Variables	Groups	Combination of groups	Mean difference
1. Anxiety			
a. Panic Attack & Agoraphobia	1—Orphan	1—2	-0.97
	2—Destitute	1—3	1.58*
	3--Creche-attender	1—4	2.33**
	4--Normal controls	2—3	2.55**
		2—4	3.3**
		3—4	0.75
b. Separation Anxiety Disorder	1—Orphan	1—2	-0.22
	2—Destitute	1—3	1.22
	3--Creche-attender	1—4	1.73*
	4--Normal controls	2—3	1.43
		2—4	1.95**
		3—4	0.52
c. Social Phobia	1—Orphan	1—2	0.88
	2—Destitute	1—3	2.90**
	3--Creche-attender	1—4	3.12**
	4--Normal controls	2—3	2.02**
		2—4	2.23**
		3—4	0.22
e. O.C.D.	1—Orphan	1—2	0.22
	2—Destitute	1—3	4.43**
	3--Creche-attender	1—4	3.98**
	4--Normal controls	2—3	4.22**
		2—4	3.77**
		3—4	-0.45
f. G.A.D.	1—Orphan	1—2	-0.0667
	2—Destitute	1—3	2.27**
	3--Creche-attender	1—4	2.55**
	4--Normal controls	2—3	2.33**
		2—4	2.62**
		3—4	0.28
2. Personality			
f. Movement responses(M)	1—Orphan	1—2	-3.60**
	2—Destitute	1—3	3.20*
	3--Creche-attender	1—4	2.07
	4--Normal controls	2—3	6.80**
		2—4	5.67**
		3—4	-1.13
g .Most typical responses(MT)	1—Orphan	1—2	0.97

Variables	Groups	Combination of groups	Mean difference
	2—Destitute	1—3	2.15**
	3--Creche-attender	1—4	2.58**
	4--Normal controls	2—3	1.18
		2—4	1.62**
		3—4	0.43
k. Pathological scale			
l. Hostility & Aggression (HAS)	1—Orphan	1—2	-0.8
	2—Destitute	1—3	1.55**
	3--Creche-attender	1—4	0.47
	4--Normal controls	2—3	2.35**
		2—4	1.27**
		3—4	-1.08**

*p<0.05; **p<0.01

The results may be narrated as follows:

1. Orphan children have significantly higher scores (as compared to creche attender children) in certain dimensions of Anxiety like, Panic attack and Agoraphobia, Social phobia, O.C.D., G.A.D.; certain indices of Personality such as, Movement responses (M), Most Typical responses (MT), Hostility and Aggression (HAS). They have significantly lower scores (as compared to destitute children) in one index of Personality such as, Movement responses (M). They also have significantly higher scores (as compared to normal children) in certain dimensions of Anxiety like, Panic attack and Agoraphobia, Separation Anxiety disorder, Social phobia, O.C.D., G.A.D.; only Most Typical responses (MT) index of Personality.

2. Destitute children have significantly higher scores (as compared to creche attender children) in certain dimensions of Anxiety like, Panic attack and Agoraphobia, Social phobia, O.C.D., G.A.D.; certain indices of Personality such as, Movement responses (M), Hostility and Aggression (HAS). They have significantly higher scores (as compared to normal children) in certain dimensions of Anxiety like, Panic attack and Agoraphobia, Separation Anxiety disorder, Social phobia, O.C.D., G.A.D.; certain indices of Personality such as, Movement responses (M), Most Typical responses (MT), Hostility and Aggression (HAS).

3. Creche-attending children have significantly lower scores (as compared to normal children) in only one index of personality such as, Hostility and Aggression (HAS).

Discussion:

The results indicate that Orphan children have higher scores with respect to the different dimensions of aggression such as, state anger/ feelings (S Ang/ F), state anger/ expression (S-Ang/ VP), trait anger/ temperament (T Ang/ T), trait anger/ reaction (T Ang/ R), anger expression out (AX-O) and anger control (AC) in comparison to normal controls. They have higher scores with respect to the different dimensions of aggression such as, state anger/ expression (S-Ang/ VP), trait anger/ reaction (T Ang/ R), anger expression out (AX-O) and anger control (AC) as compared to the destitute children. They have higher attachment score than normal children. Higher scores in all the dimensions of anxiety are found in orphan children as compared to normal children. As far as the different personality indices are concerned, significantly higher number of animal responses (A), movement responses (M), most typical responses (MT) are found in orphan children. In the same tune, there has been found lesser number of atypical responses (AT) in orphans. Orphan children

also scored higher in hostility and aggression (HAS) scale of personality.

The Higher scores are found for destitute children with respect to the different dimensions of aggression such as, state anger/ feelings (S Ang/ F), state anger/ expression (S-Ang/ VP), trait anger/ temperament (T Ang/ T), trait anger/ reaction (T Ang/ R), anger expression out (AX-O) and anger control (AC) in comparison to normal children. Destitute children are also found to score higher in attachment than the normal controls. Higher scores in all the dimensions of anxiety are found in destitute children as compared to the normal children. They are found to have higher mean scores as compared to normal children in certain indices of personality like, human response (H), animal response(A), anatomical responses (At), movement responses (M), most typical responses (MT), rejection responses (Rej.) and hostility and aggression responses (HAS).

The Creche-attender children have higher scores with respect to certain dimensions of aggression such as, state anger/ feelings (S Ang/ F), trait anger/ temperament (T Ang/ T), trait anger/ reaction (T Ang/ R), and anger expression in (AX-I) in comparison to the normal controls. Creche attending children scored the highest in attachment than all other groups of children. Higher scores almost in all the dimensions of anxiety except for O.C.D. are found in creche going children as compared to normal children. Creche-attending children scored higher in certain indices of personality such as, animal responses (A), anatomical responses (At), most typical (MT) responses and rejection (Rej.) responses than normal children.

The Normal children who live with both their parents at their residences are found to be comparatively in better condition in dealing with their aggressive impulses than the other groups of children. Normal children scored lowest in attachment compared to all other groups of children. They scored least in anxiety dimensions. In normal children, scores in the two indices of personality, namely total number of responses (R) and atypical responses (AT) are found to be higher.

The findings may be explained by the four-fold comparative nature of personality profiles of children as follows:

a.Orphan children: Orphan children are deprived of parental affection and care which their normal counterparts get easily. Despite their constant effort to keep their aggression under control, the inner cry for emotional warmth appears to spill over the outer surface of their behavior. Not having parents in the formative years of their lives and the sense of being just victims of the prevailing circumstances for which they themselves have no direct control, appear to create intense vacuum and make them feel insecure, helpless and frustrated. Thus, as a result, they tend to externalize their anger (Makaya et al, 2002; Atwine, et al, 2005). Many orphans may become withdrawn and passive or develop sadness, anger, fear, and anti-social behavior and become violent or depressed (Subbarao & Coury, 2004).

Besides, they had higher attachment score than normal controls indicating higher feelings of security in them despite staying in orphanages. This might be due to the reason that these children feel comfortable under the constant care and affection of the mother-like figure(s) for their steady responsiveness, sensitivity and availability which they crave (Dwyer, 2005). Due to their limited exposure to the external world and limited available resources, they have lower expectations which can be satisfied easily as compared to their normal counterparts. The schema of “internal working model” of their mother figures appears to be well-integrated and consolidated because of which orphan children appear to be emotionally secured and apparently balanced (Bretherton, 1992).

Nevertheless, higher scores in all the dimensions of anxiety were found among the former group as compared to normal children. The prevailing life situation prompts them to have a stigmatized or labeled personalized self-image resulting in open social phobia. They commonly have the fear that they would

be degraded by others for no good reasons of their own. Hence the lack of self-confidence and intense avoidant response in social set up (Mbozi, et al, 2006; Chakraborty, et al, 2015).

In response to the SIS images, significantly higher number of animal responses (A) by orphan children might be explained by the fact that they appeared to be more comfortable with animals than human beings and are psychologically immature (Cassell & Dubey, 2003; Holtzman et. al, 1961). This may be because of their non-available emotionally warm human figures in the earlier stages of life and spontaneous identification with available animals around them. It has been found that double orphans (both parents absent) are more likely to experience behavioral and emotional difficulties along with low rates of trusting relationships (Baaroy & Webb, 2008; Kang, et al., 2008; Zhao et al, 2010). Movement responses (M) were noticeably higher in case of orphan children than normal counterparts which may be since orphans might prefer to see humans and animals active and dynamic as a compensatory mechanism for their emotional vulnerability. Most typical responses (MT) were much higher in orphan children as compared to normal controls which is suggestive of coherent, logical thinking, and ability to keep up to the demands of the society. It may also be interpreted as a measure of ego-strength and team concept, owing to their striving to conform to the mass and thereby form an identity. In the same tune, lesser number of atypical responses (AT) in orphans was found. The number of atypical responses is proportionate to the degree of psychological or psychiatric disturbance as per Cassell & Dubey (2003). Therefore, the higher number of most typical (MT) responses and lesser number of AT responses strongly reflect their inner urge to maintain group conformity to be accepted by the society at large. These children also scored higher in hostility and aggression (HAS) scale of personality as an expression of their hostile impulses (Cassell, 1977) resulting from their inner frustrations, conflicts and coping failures in contrast to normal counterparts. This may be explained by their inner reactive tendencies to frustrations of different kinds.

b. Destitute Children: Despite the presence of their parents, since destitute children are separated from them, they develop a sense of being 'thrown out' of the family although they have a natural urge to maintain proximity with their parents. De, et al, (1993) found that normal adult female subjects, residing in hostels since their childhood, feel disturbed psychologically than their non-hosteller counterparts who enjoy family attachments as more privileged group of the society. This feeling of alienation may give rise to aggressive reactions and consequent behaviors in destitute children as compared to their normal counterparts. Occasional exposures to the family set-up keep the feeling of emotional deprivation alive and prominent in their mind, making them to score higher in attachment than normal controls. Fanshel & Shinn (1978) found that initial process of separation from their parents is experienced by many foster children as catastrophic or minimally as quite sad and unpleasant. The initial parting is dramatic and frightening, and the children are generally ill-prepared. According to Kalhotra (2013), destitute children are unfortunate not to have balanced social climate within the home, where the child spends most of the crucial and formative years of his/ her life, leading to unhealthy mental and moral or social growth. Moreover, they show more aggressive behavior and anxiety in the form of separation pangs as well as generalized fear to gain attention and recognition from their peers as an alternative to parental acceptance which they might get in living together with their parents (Leaman, 2005).

About responses to the SIS, the number of human responses (H) is indicative of interpersonal relationship with human beings (Cassell & Dubey, 2003). Higher H responses among destitute suggest that they have high aspirations to form healthy interpersonal relationship to establish their own identity in

the society. Anatomical responses are suggestive of poor self-image and preoccupation with internal body organs. Despite having a family, as destitute children are separated from their parents, they feel rejected by their parents without realizing the cause resulting in giving birth to aggressive predisposition and poor self-image which often gets projected in higher (At) responses of SIS images (Cassell and Dubey, 1998, 2003). Movement responses (M) were also higher in case of destitute children than normal counterparts which may be since the former prefer to see humans and animals as active. Like orphan children, higher MT responses in case of destitute children also resulted from their intense urge for social acceptance than their normal counterparts. They were found to have higher score on Rejection (Rej.) dimension in comparison to normal controls, thereby showing blockage in their thought process (Chakraborty, et al, 2015).

c. Creche-attending Children: Creche-attender children seem to suffer from subtle feelings of emotional deprivation because of brief separation from the primary love object, the mother figure, for considerable hours for most of the days (Sanyal & Bhowmick, 1992). As the mother figure is perceived as the provider of routine nurturant care, emotional stability and discipline to the child and thus occupies a central position in the child's life, inadequate mother-child interactions seem to lead crèche-attending children to experience greater amount of anger as a precursor to aggression within their systems. In the absence of mothers' direct affection and contact for a prolonged period in most of the days of a week, they remain dissatisfied in their association with professional mother-substitutes at creches. Flugel (1934) found serious effect of gross and prolonged insufficient mother-child interaction on the child's mind that leads to negative consequences. The higher magnitude of mean value in internalized aggression suggests higher internal feelings of anger, rather than overt manifestation, for crèche-attending children as they try to hold or repress anger with the feeling that they should not express higher levels of emotion as they grow older and become socialized (Zeman& Shipman, 1996).

Children-attending creche for certain specific hours of the day scored the highest in attachment among all the groups of children. This may be because in the crèche, such children are professionally attended and hence properly cared for. Mothers at home owing to guilt feeling over non-availability in the day time are extra-nurturant emotionally. Since children must interact with both their biological mothers and the substitute mother-figures in the same day, they are better able to identify the similarities as well as differences in between the two mother figures and appear to be emotionally more adaptable. Therefore, they seem to be better able to manage to maintain a balance accordingly.

Higher scores almost in all the dimensions of anxiety except for O.C.D. were found in crèche-attender children as compared to normal children. Since their parents go out for their work by keeping their children in creche, they must spend certain hours of the day under the supervision of caregivers. Hence, a feeling of insecurity appears to operate in them due to the unfamiliarity of the surrounding environment initially and non-availability of family members in the situation (Hoffman, 1970). But comparing creche-attending children with orphan and destitute children, it is found that creche-attending children scored lower (except for physical injury fears) than the two other groups. This might be since parental care is available to these children, either from their biological parents at home or from professionally-trained caregivers in the creche, which their orphan and destitute partners usually lack, this perhaps helps them to feel more secured and encounter lesser anxiety than orphan and destitute children.

About responses to the SIS, creche-attender children scored higher in animal responses (A), anatomical responses (At), most typical (MT) responses and rejection (Rej.)

responses than normal children. This perhaps indicates that the former children appear to be emotionally comfortable with lower-order animals with whom emotional exchanges can be possible to an extent. They also appear to have greater urge to conform with the group in comparison to their normal partners.

d. Normal controls:Normal controls living with both their parents at their residences are found to be comparatively in better condition in dealing with their aggressive impulses than the other groups of children. Having their parents, siblings and other relatives as their care takers and getting constant attention and care from their mother figures, help them enjoy emotional warmth and closeness which have a healthy effect on global or partial aspect of child's behavioral domain (Zeman & Garber, 1996).They scored lowest in attachment compared to all other groups. This might be due to the feeling of over-protectiveness because of rigid parental control from which they want to escape (Albert, et al, 2007).

Being nurtured under parental care, normal controls scored least in anxiety dimensions as expected. This may be explained by the emotional presence of primary caregivers, when needed by the child. It serves as a "secure base" for exploration and "safe haven" to cling on when needed and be comforted during times of threat (Ainsworth, 1989; Bowlby, 1982), which appears to be non-available to other three groups.

Higher productivity and imaginative capacity have been found in normal children as indicated by their higher scores in total responses (R). As the emotional warmth of parents is available to them, they can utilize their imaginative capacity and other resources almost fully compared to the other groups of children. Higher atypical responses (AT) suggest that normal children tend to be innovative to establish their personalized identity(Cassell & Dubey, 2003).

Conclusive comments:

Emotional bond of caregivers seems to be the primary positive element for any developing self. Lack of this specific condition because of socio-economic and deviant cultural context for young children are bound to etch negative traits in personality profile. The study's four-fold comparative angle has brought out the specific damaging as well as helping effects among orphan, destitute, crèche-attender and normal children. The study has also highlighted the efficacy of the Somatic Inkblot Series in penetrating into the mental frames of such children even at the unaware layers of their psyche.

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Role of Materialism in Influencing Self-esteem

Naveen Gupta and Riju A. Singh

Self-esteem is "our feeling of self-worth". It serves as both a protective and risk factor in the development of mental health problems. Mental disorders are among the leading causes of ill-health and disability worldwide. Depression and anxiety are the two most common forms of mental disorders. Studies provide support that low self-esteem contributes to depression (Orth, Robins, & Roberts, 2008). In this paper, we have explored the role of materialism in influencing self-esteem as materialism has become a prevailing phenomenon these days and is adversely affecting the quality of life. Materialism refers to "the importance a person gives to his possession and his/ her acquisition". Correlational design was used to study the association between self-esteem and materialism and simple Linear Regression analysis was done to understand whether materialism emerges as a significant predictor of self-esteem. The sample consisted of 600 participants in the age range of 18 to 65 years from Agra and Mathura districts of Uttar Pradesh, India. The results indicate that materialism is negatively associated to and influences self-esteem. The findings of the research have both individual and social implications and can serve as the basis for designing effective interventions aimed at preventing or reducing depression.

Self-esteem is how much we value and respect ourselves as a person. It is "our feeling of self-worth" as defined by Kaiser (1985). It is an "individual's attitude towards self" as opined by Rosenberg (1965). Self-esteem serves as both a protective and risk factor in the development of mental health problems.

Low self-esteem can manifest into negative traits/ feelings such as lack of confidence, indecisiveness, guilt, hopelessness, sadness, and hypersensitivity to criticism. According to Ziegler-Hill (2011), "low self-esteem increases the probability of poor adjustment in the wake of stressful or negative experiences" and "individuals with low self-esteem report higher levels of psychopathology and distress". Low self-esteem plays a critical role in the development of several mental disorders including anxiety, depression, and suicidal tendencies (DeHart, et al, 2006; Mann, et al, 2004). Silverstone and Salsali (2003) found that "all psychiatric patients suffer some degree of lowered self-esteem. Self-esteem was lowest in patients with major depressive disorder, eating disorders, and substance abuse. Around 300 million people suffer from depression, and 260 million suffer from anxiety disorders, placing mental disorders among the leading causes of ill-health and disability worldwide as reported by the WHO (2017). As far as low-income and middle-income countries are concerned "80% of the people likely to experience an episode of a mental disorder in their lifetime" (WHO Report, 2017)

In India, depression and anxiety are the two most common mental disorders (Gururaj et al., 2016). Orth et al. (2008) investigated the "temporal sequence of self-esteem and depression in adolescence and young adulthood, using two longitudinal data sets. The results of both studies support the vulnerability model that low self-esteem contributes to depression. Other studies also provide support that low self-esteem contributes to depression (Manna et al., 2016; Orth& Robins, 2013; Roberts, 2006; Roberts & Gamble, 2001; Silverstone, 1991). Feelings of worthlessness are included in the diagnostic criterion for depression, and low self-esteem may be an early symptom of depression (Roberts & Gamble, 2001).

Alternatively, high self-esteem can serve as a protective factor against depressive symptoms by decreasing the impact of negative thoughts (Orth, Robins, & Meier, 2009) and can contribute to positive social

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behaviour (Mann et al., 2004) as it is associated with mental well-being, adjustment, happiness, productivity, coping, success, and satisfaction (Baumeister, et al, 2003). Improving self-esteem might reduce the risk of depression regardless of whether the individual is experiencing stressful life events.

One of the most consistent finding in the self-esteem literature is the link between self-esteem and materialism (Chaplin & John, 2007; Christopher, et al, 2006; Clark et al., 2011; Isaksen & Roper, 2012; Kasser et al., 2014; Liang et al., 2016; Richins & Dawson, 1992). Materialism has become a pervasive value in current society. According to Donnelly et al, (2016) acquiring material possessions is rational and has a pragmatic value, but materialists tend to acquire material possessions beyond what has pragmatic value. This is adversely affecting our life in ways that we do not even recognize and carries cost that is worth worrying about.

Tuttle (2010) found that "individuals whose self-worth was harmed sought affirmation in high-status goods", and when self-esteem was increased, materialism decreased (Park & John, 2011). According to Burroughs et al. (2013), "materialism is an outward manifestation of deeper unmet psychological needs and insecurities" and one of the ways to reduce materialism is by enhancing self-esteem. Chaplin and John (2007) in an experimental study on U.S. children found that "when self-esteem drops, materialism peaks. And simple gestures to raise self-esteem among young consumers can have a dramatic impact on expression of materialism". Jiang,et al, (2015) suggested that "after experiencing peer rejection, priming high implicit self-esteem1 induce a decline in the participants' materialism levels". Also, materialism can be used to cope with or compensate for doubts about self-worth (Chaplin & John, 2005, 2007; Chaplin, et al, 2014; Jiang, et al, 2015; Noguti & Bokeyar, 2014; Shrum et al., 2013).

However, Meek (2007) found that "values-based materialism is only correlated with television viewing, and personality-based materialism is only correlated with self-esteem" in a study of 191 students from a University in Midwest. Thomas (2012) found no significant relationship between self-esteem and material values, in a study of 530 working executives from Kochi, Bangalore and Hyderabad. Since, the results are contradictory and most of the past studies are in western (U.S., U.K. and Australian) context, the present study aims to explore whether materialism is associated and influences self-esteem in Indian context.

Method:

This is a cross-sectional study conducted in Agra and Mathura of UP (India).A sample of 600 adults in the age range of 18 to 65 years was drawn through non-probability convenience sampling, comprising of 300 males and 300 female participants. A structured questionnaire comprising of established scales was used to measure both the variables. Means, S.Ds., and Product Moment Correlation Coefficients were computed to find whether there is any correlation between Materialism and Self-esteem. Simple Linear Regression Analysis was done to find if a linear relationship existed between the two variables. Data Analysis was done using SPSS.

Self-esteem was assessed using the Self-esteem scale developed by Rosenberg (1965) consisting of 10 items. Reliability coefficient for Materialism scale was found to be 0.71 and that of Self-esteem scale was found to be 0.77,based on the data collected from 600 respondents. Responses were scored on a "five-point Likert scale" with "response options ranging from '1' for Strongly Disagree, to '5' for Strongly Agree". The grand average or mean of sum of scores of all items in a scale, gave the overall score for the variable.

Materialism refers to "the importance a person gives to his possession and their acquisition as a necessary or desirable form of behaviour to reach end states such as happiness or an admired position in the society" as defined by

Richins and Dawson (1992) and was measured using the updated Material Values Scale (MVS) developed by Richins (2004). The scale consists of 18 items, measuring three themes, viz. “acquisition centrality”, “acquisition as the pursuit of happiness”, and “possession defined success”.

Results:

To explore the relationship between materialism and self-esteem, Pearson Product-Moment Correlation Coefficient was computed between the total scores of Richins’ Materialism Scale and Rosenberg’s Self-esteem Scale. Scores on both scales were found to be significantly correlated in the total sample as well as across gender. The correlation coefficient between materialism and self-esteem scores was -.419 in the total sample (n = 600) shown in Table 1. The correlation coefficient between materialism and self-esteem scores was -.458 in men and -.342 in women depicted in Table 2.

Table 1: Mean, S.D. & Correlation Coefficients between Materialism and Self-esteem (n = 600)

Measures	Mean	S.D.	r
Rosenberg’s Self-esteem Scores	36.47	6.79	-.419**
Richins’ Materialism Scores	52.12	8.30	

** Correlation is significant at the 0.01 level

Simple linear regression was applied to the total scores on Richins’ Materialism Scale, and Rosenberg’s Self-esteem Scale to see whether materialism can predict self-esteem. The results are shown in table 3, 4 and 5.

The results indicate that the overall model is statistically significant and provides a better fit than the intercept-only model, accounting for 17.6 percent of the variance. A significant regression equation was found R2 = 0.176, F (1, 598) = 127.355, p < .001. Thus, Materialism emerges as significant predictor of Self-esteem.

Discussion:

The results suggest that materialism and self-esteem are negatively correlated across gender and in the total sample. The results are supported by the findings of Burroughs et al. (2013),Chang & Arkin (2002), Chaplin & John (2007), Clark et al. (2011), Jiang et al. (2015), Kasser (2002), Kim et al. (2017), Noguti & Bokeyar (2014), and Rindfleisch et al, 2009).The results also suggest that materialism influences self-esteem as suggested by Isaksen & Roper (2012) and Richins & Chaplin (2015).

Table 2: Mean, S.D. and Correlation Coefficients between Materialism and Self-esteem across genders

	Measures	Mean	S.D.	r
Males	Rosenberg’s Self-esteem Scores	35.88	7.22	-.458**
	Richins’ Materialism Scores	51.95	8.70	
Females	Rosenberg’s Self-esteem Scores	37.51	5.85	-.342**
	Richins’ Materialism Scores	52.42	7.56	

** Correlation is significant at the 0.01 level

Increasing materialistic tendencies make us believe that our value is extrinsic and conditional to our possessions and that is not healthy. It often involves comparison with others and if others are perceived as doing better, it results in feelings of deficiency. Further, focus on acquiring material objects, leaves people with less time for relationships, increases feelings of isolation, self-doubt and insecurity and lowers self-esteem making them prone to depression and anxiety.

No doubt the effects of viewing television advertising upon the public have been the subject of philosophical discourse since long. We live in a society that's deeply saturated with messages that prods us towards the idea that a valuable life entails having valuable things. Advertising fosters materialistic

tendencies and creates on-going desires for goods. Advertising plays on our fears and the need for social acceptance. When we are told a product will give us youthful skin or make us more impressive, we unknowingly take away the feeling of being less than good enough, and that result in low self-esteem.

On the contrary, customers tend to remember advertisements and products that make them feel good. Instead of bombarding viewers with "ideal" or “perfect” images which negatively affect people’s self-esteem, use of realistic but positive self-esteem-based advertisements can help build customer confidence and self-esteem. Personal care brand “Dove” introduced the "Real Beauty" campaign in 2004 that encouraged its target customers-women to embrace their looks instead of criticizing themselves. This gave them a sense of confidence, which they associated with the brand, creating a strong emotional brand connection, increasing the sales from 2.5 billion to 4 billion in a span of 10 years.

Conclusion:

The results of the present study underline the influence of materialism on self-esteem. Materialistic value seems to be one of the important factors to be blamed for declining self-esteem these days. Reduction in material values has the potential for improving self-esteem of a person. Interventions that might help in preventing decline in self-esteem, thus contributing towards preventing the development of mental health problems include the following: First, Individuals can benefit by taking personal initiative to reduce the depressive, isolating effects of a materialist mind set by avoiding its stimulants particularly by tracking our exposure to advertising. Second, people can be informed about the harmful effects of materialism through Public Service Advertisements. Third, drafting of a public policy against advertisements that promote materialistic values and attack on self-esteem may be considered. Further studies might be considered using experimental design in exploring the role of promotional messages in enhancing materialistic values and lowering of self-esteem in different parts of India.

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Understanding the Sensitivity of Coping Deficit Index of Comprehensive System of Rorschach in discriminating Schizophrenia and Anxiety Spectrum Disorder and Association with Self-Reported Measure

Biswajit Dey and T.B. Singh

The studies on various indices, including CDI have been conducted in many cultures but there is dearth of studies in India. To study the effectiveness of this index and its relationship with self-reported measure of coping, the patients of three groups of 15 subjects in each(N=45), namely schizophrenia, anxiety and normal controls, were selected through purposive sampling. Each patient was assessed with socio-demographic data sheet, respective clinical ratings, Comprehensive System (CS) of Rorschach test and Coping Check-List (CCL-1). Statistical analysis revealed two CDI variables to be significantly different between psychiatric and normal group whereas, six variables of CDI have shown significant association with self-reported measure of coping.

The Rorschach Psychodiagnostic method is one of the oldest, very utilized psychological tests in US by professionals according to many reviews (Camara, et al, 2000; Watkins, et al, 1995; Piotrowski & Keller, 1989). The attraction toward the test was probably due to its unique and novel way of discriminating psychotic patients from the normal. Success of the test led to emergence of five Rorschach systems of interpretation during 40's and 50's. It became famous with their developers namely, Beck, Klopfer, Piotrowski, Rapaport and Hertz. Except using the same original blots developed by Rorschach, all these systems were slightly different in their administration and interpretation. During late 1950s and 1960s, there had been strong criticisms against the systems and the method's validity, reliability and general scientific status. The Rorschach Research Foundation was established in 1968 to review the criticism and decided to integrate all the systems, especially, Klopfer, Beck and Rapaport. Empirically supported variables were included to form a new independent system emerged in 1974, known as 'The Rorschach Comprehensive System' (Exner, 1974).

Exner's Comprehensive System of Rorschach (RCS) is unique from the other existing systems and emphasizes more on numerical analysis than other systems. Secondly.it has added six indices for diagnostic clarity of the various psychiatric groups. Thirdly it has eight interpretive domains, which give a global picture of a subject, from both normal personality to psychopathological point of view.

Coping can be defined as "the cognitive and behavioural efforts to manage specific external and/or internal demands appraised as taxing or exceeding the resources of the individual" (Folkman & Lazarus, 1988).Coping resources are thought to be the basic psychological, emotional and cognitive assets of a person which contribute to deal with adverse situations in life. It has been seen in the literature that adaptive coping efforts get compromised in most of the psychiatric and medical conditions.

There have been many studies which demonstrate failure of coping under stressful situation leads to psychobiological changes and further expression of psychotic symptoms (Myin-Germeys, et al, 2001; Nuechterlein & Dawson, 1984; Zubin & Spring, 1977). The relation between negative coping styles and schizophrenic psychopathology has been documented in many studies. Examining coping deficit through projective test also may foster comprehensive psychological management for the population.There have been very fewer comparative studies which demonstrate status of coping in different psychiatric conditions and attempt to find out

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whether any relationship exists between CDIand coping domains from a self-report inventory. This relationship, if found, can further explain the effectiveness of Coping Deficit Index (CDI) which is one of the understudied indices of CS following its development in 1991 even after a decade(Meyer &Archer, 2001).

CDI was evolved as a by-product of Depression Index (DEPI) of CS research (Strendy & Ball, 2005). DEPI criteria were frequently met by many outpatients who had history of major interpersonal problems and other emotional problems with depression (Exner, 2003). Thus, CDI's 9 variables of total 11, given in total 5 criteria, relate with either interpersonal or affective disturbances. The rest two variables deal with resources related to stress control (EA and AdjD). To be positive on CDI, minimum 4 criteria must be fulfilled out of 5. The following is the brief description of the CDI variables.

Need for the Study:

The first use of Rorschach method in India is traced back to 1947 to the work of Prasad and Asthana (Asthana, 1950a, 1950b).They examined the meaning of different scores and analyzed responses(Bhragava & Saxena, 1995).Since then many studies have been conducted in India since 1950s on schizophrenia and various other psychiatric and non-psychiatric conditions. They used especially Klopfer and Beck systems. They successfully demonstrated significant differences of many Rorschach scores between the pathological and normal population and overall effectiveness of the Rorschach method. But application of CS in India is still very rare. Manickam (2005) reported that this newer system (CS) should be popularized in the country by young scholars, clinicians and professionals. Dwivedi, et al, (1995) examined and compared the efficiency of SIS-II and Comprehensive System indices. The present study attempted to examine two major areas, one, whether variables of CDI will be found effective enough to discriminate psychiatric group, schizophrenia and anxiety group, from the normal control group and second whether there is any significant association found between CDI variables and self-report measures of coping, if so, that will support the effectiveness of the index in the system.

Objectives: The study had two objectives. First, there will be significant differences with respect to variables of CDI among the respondents of the three groups, namely, schizophrenia, ASD and normal controls. Second, there will be significant relationship of CDI variables with the self-reported CCL-1among the three groups.

Methodology:

Sample: The study used purposive sampling method to collect its clinical sample from inpatient and outpatient services from Hospital for Mental Health, Ahmedabad, Gujarat. ICD-10 DCR criteria were used to select 15 schizophrenia patients and 15 patients with Anxiety Spectrum Disorders (ASD).

Measures: There were total 6 measures, including socio-demographic data sheet and Exner's Comprehensive System (4th edition, Exner, 2003). Two clinical inventories were Hamilton rating Scale (HAM-A, Hamilton, 1959) and Positive and Negative Syndrome Scale (PANSS, Kay et al. 1987).General HealthQuestionnaire-28 (GHQ-28,Goldberg, 1978) for the normal control and The Coping Checklist-1 (CCL-1, Rao, et al, 1989) were administered to the three groups.

Procedure: The patients were first selected trough purposive sampling from inpatients and outpatient wards of the hospital. They were first assessed through socio-demographic data record, clinical ratings and self-reported CCL-1. Finally, Rorschach test was applied and interpreted following the guidelines of Exner's Comprehensive System (Exner, 2003).

Data Analysis: To analyze all the variables of the study SPSS 20 was used. Descriptive analysis reveals Socio-demographic variables' mean, SD, range, frequency and percentage.

Non-parametric Kruskal Wallis test was done for the three groups which consisted of 15 subjects in each, shown in Table-1. Further, Mann Whitney U test was calculated for better description between the groups. This test additionally revealed significant differences of two CDI variables between Schizophrenia and Normal Control (NC) and Anxiety Spectrum Disorder (ASD) and NC. Subsequently effect size (r) of CDI variables was calculated (Table2).Spearman correlation was done between all CDI variables and coping domains of CCL which are mentioned in table4.

Results:

Mean age of the schizophrenia, ASD and NC are 31.40 (±8.60), 34.20 (±10.13) and 29.13 (±9.98) respectively and there was no significant mean difference found. Most of them were males across the three groups. Most of the subjects of the three groups belonged to the lower SES and mean education was highest for normal controls followed by patients of ASD and then schizophrenia. There are 60%and 80% of the schizophrenia and anxiety patients, respectively from urban background and 93% of each group belonged to the nuclear family type. Schizophrenic patients were more unemployed at the time of assessment which might have resulted from their severe psychopathology. Regarding clinical data, both the groups had similar duration of illness, mean of which for schizophrenia is 6.23 and anxiety group is 5.89 years. Mean HAM-A score was 25.26 which indicated moderate to severe level of anxiety in the patients. PANSS positive score of the sample was 19.73±6.8, Negative was 19.06±4.19and General Psychopathology was 37.93±7.02. Results indicate patients in the study had more positive symptoms than negative symptoms, but the difference is very minimum. For the subjects of NC group Mean GHQ score was 4.26±1.28 which was lower than its cut off (6) suggest they were free from any active physical or psychiatric symptoms.

Table1: Mean Rank and Chi-Square Values of Kruskal Wallis Test for CDI variables and CCL-1 domains

Variables	Schizophrenia Mean Rank	Anxiety Disorders Mean Rank	Normal Mean Rank	Chi-Square Values
CCLPS	8.77	24.37	35.87	**32.96******
DP	13.83	29.50	25.67	**12.23****
DN	25.80	13.27	29.93	**14.35******
AR	13.73	26.47	28.80	**12.20****
RF	19.83	27.50	21.67	2.84
DB	28.93	25.27	14.80	**9.54*****
SS	16.57	21.63	30.80	**9.67*****
EA	21.60	24.43	22.97	0.35
AdjD	20.77	24.80	23.43	0.88
Pure H	24.43	17.13	27.43	5.12
COP	19.37	21.07	28.57	4.76
AG	22.37	20.97	25.67	1.36
W Sum C	24.73	26.40	17.87	3.73
Isolation Index	26.80	22.63	19.57	2.30
Affective Ratio	26.77	18.67	23.57	2.90
CDI	24.07	22.53	22.40	0.16

*P<.05; **p<0.01; ***p<0.005; ****p<0.001 level of significance

CCLPS-Coping checklist problem solving, DP-Denial positive, DN- Denial negative, AR- Acceptance and redefinition, RF-Religion and faith, DB- Denial and blame, SS- Social support

The Kruskal Wallis table reveals mean rank and chi square values with level of their significance of all the studied coping and Rorschach variables. None of the CDI variables have been found to be significantly different among the groups. Problem Solving (PS) domain of CCL-1 is found to be the most robust and common variable in the three groups which has been found to be significantly lowest (p<0.001 level) in schizophrenia group, lower in ASD and comparatively better in NC group.Except one variable in the coping inventory (Religion and Faith) all the six variables have shown significant differences (significant levels range between p<0.01 to 0.001) among the three groups.

Table2: Comparative effect sizes of CDI variables between the groups with their p values

Populations	**Schiz-NC**		**Schiz-ASD**		**ASD-NC**	
Variables of CDI	**Effect Size r-value**	**p**	**Effect Size r-value**	**p**	**Effect Size r- value**	**p**
EA	0.08	0.755	0.14	0.574	0.08	0.739
AdjD	0.17	0.509	0.10	0.235	0.08	0.728
COP	0.53	**0.039***	0.08	0.730	0.41	0.110
AG	0.20	0.439	0.09	0.719	0.28	0.263
Pure H	0.13	0.598	0.37	0.142	0.59	**0.022***
Iso.Index	0.37	0.146	0.23	0.359	0.17	0.493
Afr	0.19	0.442	0.40	0.114	0.28	0.262
WSumC	0.41	0.105	0.13	0.615	0.43	0.091

*P<.05; **p<0.01; ***p<0.005; ****p<0.001 level of significance

To find out the between group differences, Mann Whitney test was carried out and findings revealed two CDI variables were significantly different between the two sets of groups. Pure H response was significantly lower (at P<.05 level of significance)in ASD group than the NC whereas, COP responses were significantly lower (at P<.05 level of significance) in schizophrenia patients than their normal counterpart.

Nonparametric Effect Sizes (ES) estimation revealed that in CDI, EA has the lowest ES (r=0.08) and COP has the highest (0.53) ES between the schizophrenia and NC; COP shows the lowest ES (0.08) and Afr reveals with highest (0.40) ES between the schizophrenia and ASD groups when comparing between ASD and NC groups, EA again remains with the lowest ES (0.08) and pure H shows the highest (0.59) ES.

Table3: Frequency and Percentage of the respondents of the three groups in each every criteria of CDI

CDI	**Schizophrenia**		**ASD**		**NC**	
Criteria	**f**	**%**	**f**	**%**	**f**	**%**
EA<6 or AdjD<0	12	80%	12	80%	13	80%
COP<2 and AG<2	11	73%	12	80%	7	47%
WSumC<2.5 or Afr<0.46	10	67%	8	54%	11	73%
Passive>Active+1 or Pure H<2	6	40%	11	73%	5	33%
SumT>1or Iso/R>0.24 or Food>0	7	47%	5	33%	3	20%

The above table shows frequency and percentage of subjects of each group who fulfilled each criterion of CDI. NC group participants showed less positive than their psychiatric counterparts to the second, fourth and fifth criteria of CDI. The first criteria remained same for the three groups

Table4: Spearman correlation coefficients of CDI and CCL variables among the three groups.

Variables	CCLPS	DP	DN	AR	RF	DB	SS
EA- Schiz	0.05	-0.21	-0.47	0.29	0.05	-0.43	0.09
ASD	0.05	-0.36	0.01	-0.31	0.29	0.31	-0.30
Normal Cont	-0.04	0.35	-0.06	-0.05	0.13	-0.09	0.14
Pure H-Schiz	-0.01	-0.07	-0.12	0.17	-0.08	0.01	0.07
ASD	-0.02	-0.11	0.14	-0.08	-0.11	-0.04	-0.08
Normal Cont	-0.25	0.01	-0.28	-0.23	-0.10	-0.21	-0.18
COP-Schiz	0.08	0.01	-0.05	0.13	-0.05	-0.14	-0.21
ASD	0.25	0.18	-0.22	-0.28	0.07	0.27	0.01
Normal Cont	**-0.66****	-0.12	-0.47	-0.21	0.08	-0.17	-0.40
AG-Schiz	-0.19	-0.17	0.19	-0.16	-0.06	-0.07	0.03
ASD	0.22	0.19	-0.04	-0.37	0.01	0.39	-0.39
Normal Cont	0.25	0.05	0.04	-0.13	0.26	**0.57***	-0.13
W Sum C-Sc	0.06	-0.20	-0.12	0.38	-0.28	0.10	-0.01
ASD	0.08	-0.33	0.18	-0.12	0.28	0.07	-0.15
Normal Cont	0.13	-0.05	0.12	0.51	-0.23	-0.30	0.27
Iso Index-Sc	-0.25	0.02	-0.38	-0.01	-0.23	-0.25	0.03
ASD	0.23	-0.14	-0.35	-0.27	0.02	0.46	-0.24
Normal Cont	0.36	0.13	**0.72****	0.13	-0.15	0.03	0.45
Aff Ratio-Sch	0.07	0.11	-0.32	0.40	0.23	-0.26	0.31
ASD-	-0.34	0.36	0.27	0.01	**0.53***	-0.03	0.23
Normal Cont	-0.37	-0.38	**-0.65****	0.07	0.05	0.11	-0.45
AdjD-Schiz	0.11	0.13	-0.02	0.09	0.09	-0.12	-0.04
ASD	-0.02	-0.05	0.13	0.14	-0.28	0.13	-0.50
Normal Cont	0.17	0.01	0.03	0.04	0.18	-0.25	0.21
CDI-Schiz	0.13	-0.02	**0.60***	-0.16	-0.07	0.33	0.05
ASD	0.10	0.24	-0.04	-0.06	-0.22	-0.02	-0.02
Normal Cont	0.31	-0.15	0.23	-0.08	-0.30	0.07	-0.04

* Significant at 0.05 level; ** significant at 0.01 level

CCLPS-Coping checklist problem solving, DP-Denial positive, DN- Denial negative, AR- Acceptance and redefinition, RF-Religion and faith, DB- Denial and blame, SS- Social support, CDI= total criteria met

This table reveals Spearman correlation coefficients between CCL and CDI variables. Five of the seven domains of CCL (PS, DN, AR, RF and DB) have been found to be significantly correlated with 6 out of studied total 9 CDI variables (significant level ranges from p<0.05-0.01). Both the psychiatric groups have shown one variable each from CDI significantly associated with CCL. In schizophrenia group, DN was found to be negatively associated with CDI total criteria at significant level. In ASD group, RF was positively associated with Afr. In NC group, PS and DN are negatively associated with COP and Afr respectively. Whereas, DN and DB are positively correlated with Isolation Index and AG respectively at significant level in the same group. DP and SS are not found to be significantly correlated with any CDI variables.

Discussion:

This study aimed to understand the sensitivity of CDI in discriminating psychiatric and normal control group also aimed to examine the association of the index with self-reported measure of coping.

The first objective: Sensitivity in discrimination of the groups- It was not completely met since CDI remained not sensitive enough to discriminate the two psychiatric groups. But it was found to be partially sensitive to differentiate psychiatric group from normal control group on two variables. Cooperative responses were significantly lower in schizophrenia group than NC group. NC group also responded with a greater number of Pure human responses than patients of ASD group. These two variables were also found to have good support ($r \geq 0.21$-$0.32, p<0.05$)in the meta-analysis of Mihura et al (2013). They found CDI with modest support ($r \geq 0.20$-$0.15, p<0.05$). These finding reveal normal people had more positive interpersonal relationship and they pursue the same, on contrary, patients with schizophrenia lack in social relations and do not perceive positive or productive relations around them. Patients having anxiety disorders also reported to have inadequate interpersonal relationship and their perception of the environment is not always reality or experience based (indicated by a smaller number of H responses) rather more imaginary based than their normal counterpart. The findings are very straight and can be conceptualized as the natural part of their psychopathology and phenomenology. AG response, as a variable in CDI was highest (non-significant) in schizophrenia patients than their ASD and NC counterparts. Finding is consistent with meta-analysis of 204 studies by Douglas, Guy and Hart (2009) where violent behaviour was associated with psychotic symptoms. This finding can be related to their more positive symptoms, as indicated by more PANSSP score than PANSSN score, since aggressive outbursts and impulsivity have been often found with delusions, hallucinations in paranoid schizophrenia. They often misinterpret the environmental neutral stimuli and react with hostility. As mentioned above, the current study had 13 patients with the diagnosis of paranoid schizophrenia out of total 15. More number of AG responses can also be due to their subjective poor social support which is significantly lowest in self report CCL inventory. On contrary, NC group has shown more AG responses than ASD group. In case of emotional modulation, the schizophrenics have shown more impulsivity (indicated by non-significantly higher affective ratio).They were also more secluded in the society as indicated by highest score on Isolation index (non-significant) and consistent with significantly lower usage of positive coping strategies in adverse situations as indicated by self-report CCL inventory. Most of the variables in CDI, irrespective of group comparison, reveal small to medium ES. CDI remains less conclusive to differentiate the psychiatric groups but significant differences of two variables, COP and Pure H, between schizophrenia and NC and ASD and NC respectively, support the usefulness of CDI.

The second objective: The association with self-reported measure (CCL-I)-These findings are consistent with the conventional notion that negative coping styles are related with poor coping resources as it is found in schizophrenia group. In ASD group, religious coping style was significantly associated with emotional aspect of coping in CS. Only the RF as a coping strategyis found to be positively related with emotional modulation capabilities (Afr). This is probably due to majority of the ASD group consisted of OCD patients and they had obsessions and compulsions with religious rituals. This finding is not surprising since the subcontinent is known for its theism, religiosity and spirituality since its ancient times. Religious beliefs remain still the core of Indian thoughts and behaviour usually irrespective of any medical or psychiatric conditionsNegative coping styles in normal population are found to be positively associated with negative coping constructs of CS, namely; isolation and aggression of CDI. A negative associationbetween problem solving capacity with positive coping like cooperation in interpersonal areas can be explained probably because they use their problem-solving skills more to work out with other areas of functioning than only in interpersonal areas.

Conclusion:

Since coping deficits have been reported to be present in most of the psychiatric conditions, the study focused on examining how CDI reflects its sensitivity to two different psychiatric populations, schizophrenia and anxiety and normal control population. Finally, the study also investigated how the variables of CDI are related with a coping self-report inventory. CDI remains less conclusive to differentiate the psychiatric groups but two variables out of the9 have been found to be significantly different between psychiatric and the normal group. The association statistics revealed a more satisfactory result, where six out of nine CDI variables were found significantly associated with five out of seven CCL variables among the three groups. Positive coping style deficit in schizophrenia, as indicated by CDI and self-report measures, also suggest comprehensive management of these patients.

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Should We Teach Bender-Gestalt to Clinical Psychology Students? An Alternative View to Piotrowski's 2016 Review

Layne D. Bennion, Kyle J. Self, Phillip C. Kroke and Baylee C. Crone

Piotrowski (2016) reviewed 30 studies documenting psychologists' use of the Bender-Gestalt (B-G) from 1992 to 2014 across a variety of settings and samples. Based on his review, he offered the following conclusions: mental health practitioners, including psychologists, ignore "biased critiques" of the B-G, find the B-G useful in assessment of children, use the B-G to help generate working hypotheses, use the B-G as a rapid assessment tool, and use the B-G from an idiographic approach. Our analysis of these studies produced a different set of conclusions: (a) use of the B-G has declined over the past 20 years, (b) the B-G is being used even less by forensic psychologists and neuropsychologists (as compared to other practicing psychologists), (c) use of the B-G by international psychologists for clinical evaluations is quite rare, (d) the B-G does have usefulness, and continues to be used for, basic psychological science research such as visual-motor development and, (e) the B-G is a very interesting example of historical changes related to the needs of clinicians at various times, but should not be taught as an instrument for psychological evaluations in clinical psychology programs.

Instructors within clinical psychology doctoral programs carefully consider which tests to teach comprehensively, explain through an overview, to briefly reference as a historical interest, and to ignore. Many also regularly discuss with and survey students and/or their supervisors about their assessment experiences at various externships. This surveying provides timely information on which tests are utilized and what training opportunities are needed. Thus, we were pleased to come across Piotrowski's (2016) article "Bender-Gestalt Test Usage Worldwide: A Review of 30 Practice-based Studies". While we appreciated his extensive review, we think important concepts or interpretations of the bibliometric data were missing from the discussion. These concerns are relevant in the decision-making process of whether to teach the Bender-Gestalt (B-G).

Piotrowski, based on his publication history, has long been an advocate of the use of various types of projective testing and used this review to bolster his argument that the B-G is popular among psychologists who are comfortable with "reliance on non-standardized assessment tools." He advocates for the use of the B-G primarily as a projective drawing tool. After reviewing the 30 articles Piotrowski cited, we have a different viewpoint. That is, while the multiple derivatives of the B-G have served various roles over time, only the versions with research and psychometric support should be considered for clinical training.

Our first concern of Piotrowski's review is the lack of differentiation between the various uses and modifications of the B-G. In our view, this seriously limits any interpretation from the data and is a significant complication in our interest of deciding to include or exclude the B-G in clinical training. In Piotrowski's paper, the B-G refers to a range of measurement tools based on the stimulus figures selected by Dr. Loretta Bender 80 years ago (Bender, 1938,1946). Use of the B-G as a projective psychodiagnostic tool (e.g., Reichenberg & Raphael,1992; Hutt, 1977) is a rather divergent use from Dr. Bender's initial conceptualization and scoring; it has a completely different goal and thus should be psychometrically examined and researched as a separate test. Various iterations of the B-G and scoring systems should not be considered as approximately equivalent, alternate versions of the B-G. Even Hutt, the primary developer of a scoring system of the B-G as a projective, noted it"…is inaccurate to speak of the Bender-Gestalt test as if this were a single test instrument. Not only do test cards different from one version to another, but methods of administration, scoring,

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analysis and evaluation also differ significantly. Each of these approaches may have its own particular values and limitations….our attempt has been to maximize projective features of the test performance and to provide both clinical and objective methods for its analysis" (Hutt, M., 1977, p. 18).

Brannigan & associates in their development of the Bender-Gestalt-II (Brannigan & Brunner, 2002; Brannigan & Decker, 2006), share a historical connection to Dr. Bender's original B-G, but the B-G-II is the not the same measurement tool as Dr. Bender's B-G. The B-G-II does not have the same psychometrics as Dr. Bender's B-G (or the many other variations). The bottom line is that B-G is not one assessment tool or technique.

Across the 30 studies cited by Piotrowski, at least four different categories for the use of Dr. Bender's stimulus figures were found. First, the B-G has been used as an 'ice - breaker' (e.g., Boccaccini & Brodsky, 1999; Kennedy, et al, 1994). That is, it appears the B-G was utilized as an introduction to the process of testing rather than as a core interpretative aspect of an assessment battery. For such purposes, many test-like tasks could be utilized and the psychometrics of an 'ice breaker' are largely irrelevant. Second, the B-G has been used as a projective drawing or as a psychodiagnostic tool (e.g., Hutton, et al, 1992; Stinnett, et al, 1994). Third, the B-G has been used as "neuropsychological screener" or as an assessment of visuospatial abilities (e.g., Wilson & Reschly, 1996). Fourth, the B-G has been as a measure of cognitive development in young children (e.g., Sisto, et al, 2010 whose scoring is based on Koppitz). This latter use is most like Dr. Bender's original intention for the tool.

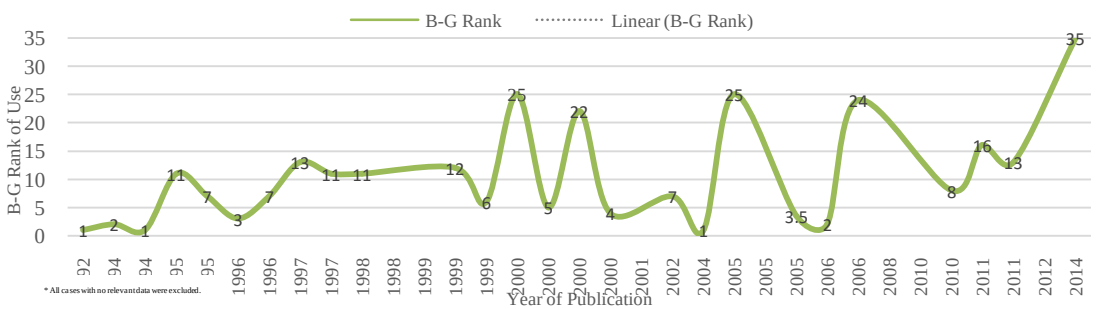
Unfortunately for most of the 30 reviewed studies, the various versions and uses of the B-G are combined or the version or use was not specified. In our view, it would be much more instructive to have data distinguishing specific versions and uses of the B-G to make decisions about using the B-G. Not having such data is regrettable, but we will proceed using the available data.

Our second concern with Piotrowski's review, is that we are somewhat troubled using test ranking as a basis for deciding which tests psychologist should be focused on and using. Historically, many researchers have, as Piotrowski has done, utilized rankings of test usage (e.g., Sundberg, 1961; Lubin, et al, 1984; Piotrowski, 2007, 2017). This metric is handy, easily computed, widely used by the public, and intuitively communicates importance. However, as one moves beyond the top few ranks, how does one interpret the ranking of a test? For example, among the 30 studies cited, 19 provide information about B-G use ranking and percentage of respondents who use the B-G. As one might expect, among the studies ranking the B-G within the top three, the percentage of respondents using the B-G was high (varies from 82% to 50%). However, rankings of 7th or 8th show respondent percentage of use ranging from 34% to 80%. Rankings higher than 10th have percentage of usage ranging from 1.8% to 72%. Given those wide ranges in frequency, one wonders if usage frequency is more related to how the questions are asked of the respondents and to the sample of psychologists. In the end, to say a test is ranked, for example 4th or 6th or 10th based on a sample of users, tells one a limited amount of information about how frequently the test is used within the assessed sample.

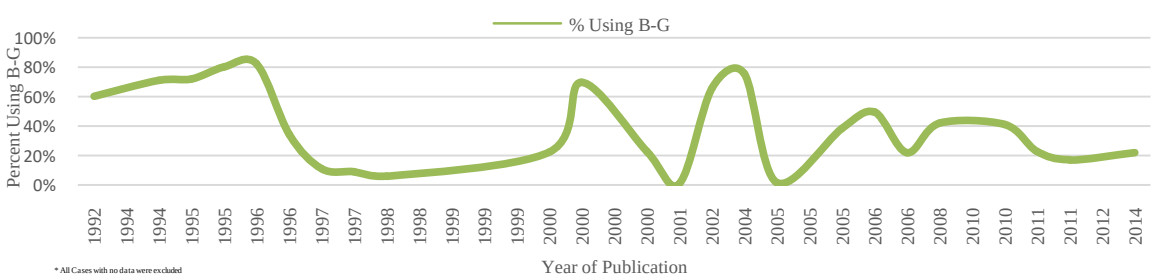
A few of the studies do include more detailed information on frequency of use of the B-G. Using data from Watkins, et al, (1995), Archer and Newsome (2000), and Archer, et al, (2006), one can generate a more nuanced understanding of B-G rank and frequency of use. In the Watkins et al. dataset, B-G is ranked 7th by total mentions. But even at a ranking of 7th, only 40% of respondents use the B-G "frequently" or "always". Even if one includes the next level of frequency, psychologists using the B-G "moderate[ly]", half (52%) of respondents are using the B-G with some level of regularity. In the Archer and Newsome (2000) dataset, B-G is ranked

22nd by weighted score and only 9% of all respondents use the B-G more frequently than “50% of the time”. Archer et. al., (2006) ranked B-G as 5th by weighted score, which seems impressive, but that ranking was only within a specific test category (neuropsychological tests). Scrutinizing the presented data, only 10% of the total sample are using the B-G at frequencies greater than 50% of the time. If one collapses Archer et al. data across categories of tests, the B-G falls from 5th (within a specific category of tests) to an overall rank of 25th (for adult evaluations). Again, rank (beyond the top few ranks) does little in answering the question of which tests should be taught in clinical psychology graduate programs.

A third concern related to Piotrowski’s review is that he ignored trends over time when making conclusions about the importance of the B-G to psychologists. To his credit, he reviewed 20 years of studies which included any information about the use of the B-G by psychologists. However, if one organizes the data from these studies chronologically, there are clear trends over the twenty-year span. Even given the previously discussed complications of using rank and percentage data of psychologists using the B-G (any version), the rank and percentage of use data on the B-G indicates less use in recent years: the rank of the B-G is increasing over time and the percentage of psychologists using the B-G regularly is declining. As depicted in Graph #1 “B-G Rank of Use by Psychologist across Year of Publication”, rank of the B-G (any version) in the 1990s tended to be in the within the top five. By 2010 and later, the rank of B-G was 8th at best and miniscule at worst. Similarly, as shown in Graph #2 “Percent of Psychologists Using B-G across Years of Publication”, the percentage of psychologists using the B-G (any version and any frequency of use) in the 1990s was 60-80%. By 2010 and after, the percentage of psychologists using the B-G has diminished to less than half (40% and lower). Thus, chronological trends across 20 years, whether measured by rank or percentage of respondents using the B-G, shows a clear reduction in use.

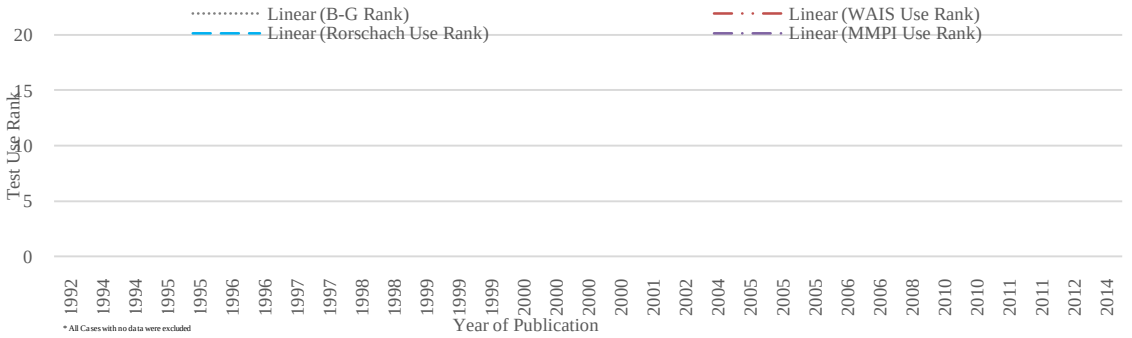


Graph #1: B-G Rank of Use by Psychologist across Year of Publication

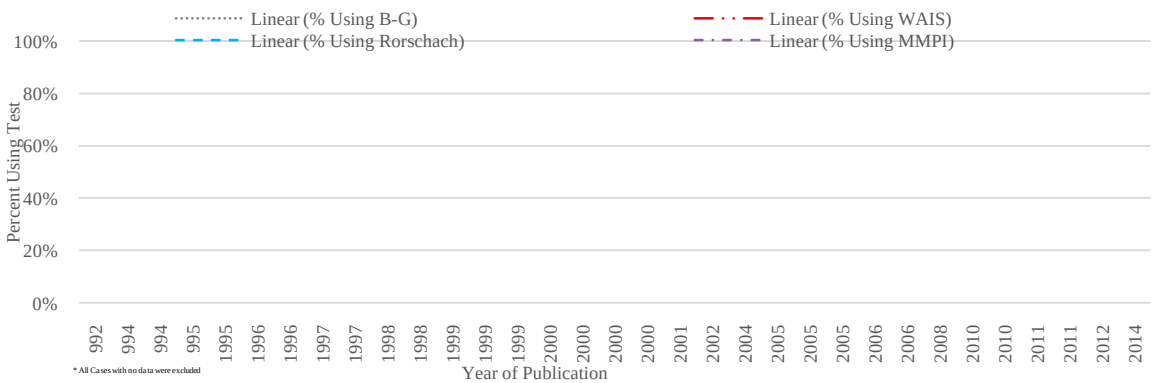


Graph #2: Percent of Psychologists Using B-G Across Years of Publication

As a comparison of chronological trends of test usage, we examined just those studies (among the 30 reviewed) which showed data for other commonly used psychological tests. Again, while the rank varies widely and the number of studies with usable data was smaller, the 20-year trend line (Graph #3, "Trend Line for Test Use Rank by Psychologists of the B-G, WAIS, Rorschach and MMPI across Years of Publication") again shows B-G rank declining (less use) relative to the other tests. In contrast the rank for the WAIS, the Rorschach and the MMPI all of which show slight increases in rank or have relatively stable rankings over the 20-year span. A similar pattern across time is found for percentage of psychologists using these tests (Graph #4, "Trend Line for Percent of Psychologists Using B-G, WAIS, Rorschach and MMPI across Years of Publication").



Graph #3: Trend Line for Test Use Rank by Psychologists of the B-G, WAIS, Rorschach and MMPI Across Years of Publication



Graph #4: Trend Line for Percent of Psychologists Using B-G, WAIS, Rorschach and MMPI Across Years of Publication

Given that a minority of psychologists are regularly using the B-G in recent years, we wondered if there was any indication which psychologists are using the B-G. Donoso and colleagues provided a clue (Donoso, et al, 2010) based on their sample of psychologists participating in Vocational Rehabilitation evaluations. They found a significant effect for age and noted younger practitioners used the B-G less than older respondents (their study specified uses of the B-G as either a neuropsychological test or as a projective). Hojnoski,et al, (2006) also opined that older clinicians using the B-G were trained when projective were more commonly used. Thus, one possible factor in decreased use of the B-

G over time is age of psychologist (or more accurately when they were trained) and what assessment tools were taught at the time they were doing their graduate training.

Further, based on the data from these 30 studies, it appears that some specialties within psychology, neuropsychology and forensic psychology, were using the B-G even less than other psychologists in contrast to Piotrowski's statement that neuropsychologists use the B-G "moderately". Lees-Haley and associates ranked B-G use as 7th in 1996 based a sample of forensic neuropsychologists (Lees-Haley, et al, (1996). Camara and team ranked B-G use among neuropsychologists as 25th in 2000 (Camara, et al, 2000). Archer et al. (2006), as noted above, in a sample of forensic psychologists found B-G use 5th within the "Neuropsychology Tests" category. However, only 77 (51%) of the sample even responded to that section and of those 77, approximately half (56%) "never" use the B-G. If one ignores the categories of tests used by Archer et.al., the overall use rank of the B-G across all the tests surveyed drops to 25th (for adult evaluations). Archer et.al. (2006), does note the B-G as the "most frequently used single test" within the category, but components of the Halstead-Reitan battery were used more frequently. A recent study (Rabin, et al, 2005) surveying 747 US and Canadian neuropsychologists ranked the B-G as 25th in frequency of use.

A fourth concern related to Piotrowski's review, was the lack of coverage on recommendations about test usage from the 30 sets of authors. Wilson and Reschly (1996) were the only ones to make a specific recommendation about B-G use and their recommendation was not to use the B-G as a projective. Viljoen, et al, (1999) did comment that more training in the appropriate use the B-G was needed for their sample (versus concluding the B-G should be used more). Out of 30 sets of authors, 11 teams made specific recommendation about use of projective testing or projective drawings in clinical evaluations. 10 out of 11 (91%) criticized the use of projective in clinical evaluations which includes the use of the B-G for psychodiagnostic purposes (Hutton, et al, 1992; Wilson & Reschly, 1996; Bow, et al, 2002; Lally, 2003; Bekhit,et al, 2005; Hojnoskiet.al., 2006; Archer, 2006; Donosoet.al., 2010; Ackerman & Pritzl, 2011; Peterson, et al, 2014).

A fifth problem with Piotrowski's review is his conclusion of "rather robust worldwide" use of the B-G. He cited 11 additional studies as examples of scale of international use of the B-G (Merion Soto & Allen, 2013 [authors were cited as Cesar & Ryan, 2013]; Keppeke et al., 2013; Sisto et al., 2010; Ozer, 2011; Murayama et al., 2007; Heuer & Hegele, 2015; Sulanki & Prakash, 2015; Chan, 2001; Mazzeschi & Lis, 2000; dos Santos, et al, 2014; Bohm, et al, 2010). However, these cited studies were all basic science studies, not concerning the use of the B-G as tool in the clinical evaluation of individuals. Five of the studies used the B-G as a comparative tool to measure visual-motor development in non-clinical samples of young children from various cultures (Bohm et al., 2010; dos Santos, et al, 2014; Chan 2001; Ozer, 2011) or in adolescents (Keppeke et al., 2013). Two of the studies were using visual-motor tasks to distinguish clinical populations whose neurological disorders are known to impact visual-motor functioning. For example, Murayama and associates work examined the visuomotor skills of moderately demented Alzheimer's vs. Lewy Body patients (Murayama et al., 2007) or Sulanki & Prakash's (2015) work in comparing changes in visual motor functioning after visual training in patients diagnosed with schizophrenia. Three studies were focused on assessing various psychometrics of the B-G within the context of assessing normal cognitive development (Merion Soto & Allen, 2013; Mazzeschi & Lis, 2000; Sisto et al., 2010). Merion Soto and Allen's (2013) study used the B-G-II (which none of the other cited studies did) in a sample of non-immigrant Hispanic preschool children. Several studies referenced the version of the B-G scoring

systems associated with Koppitz (1963) but the studies focus was scoring visuospatial distortions per Koppitz's system as related to cognitive development instead of scoring for emotional indicators. Lastly, et al,'s (2015) research was a basic science study investigating adaptive visual-motor skills in response to feedback and did not use the B-G in their study. For the cited international uses, the B-G was utilized as a measure of visual-motor abilities across normal development in various cultural samples or was used to assess visuo-motor functioning in neurological patients whose disease processes are known to impact visual-motor functioning. Thus, we agree the B-G is being used internationally, but for much more limited purposes than Piotrowski's review was advocating (it as a projective drawing or clinical tool in clinical evaluations).

Piotrowski's review did include studies which assessed use of the B-G in non-US psychologist samples (Muniz, et al, 1999; Viljoen et al, 1999; Muniz et al, 2001; Evers et al, 2012; Herzberg & Matter, 2008; de Oliveira et al, 2005; Bekhit et al, 2005, Chan & Lee, 1995). We found it difficult to put much stock in Muniz et al. (1999) as the source of the data was 1-3 "experts" from each of 13 Latin and South American countries who offered their opinion about how much various tests were used in their respective countries. Their data were not a survey of practitioners from each of the 13 countries. Viljoen et al (1999) utilized a survey sent to former master's degree students from University of the Free State (South Africa). There was no data about actual test usage, but some respondents wrote in their opinions that more training was needed in the program for several tests including the B-G. Piotrowski's statement based on Muniz et al. (2001) that the B-G ranked "amongst the top 10 tests" is accurate but leaves out additional important information. The B-G was ranked within the top 10 for three of the six countries (Croatia, Slovia and Spain) and was only endorsed by 4-28% of the respondents in those countries. The B-G was not within the top 10 for other three countries (Belgium, Holland, and UK). Collapsing across countries, out of a total of 8690 surveyed psychologists in the 6 European countries only 3% (n=285) endorsed regular use of the B-G. Piotrowski summarized Evers et al. (2012) survey of 10018 psychologists from 17 European countries as "The B-G was used by 27% in Croatia, by 21% in Slovenia, by 10% in Turkey and Lithuania, and 8% in Poland." This is accurate, but again leaves out additional important information. That is, psychologists in 12 countries (71% of the countries) did not rank the B-G in the top 10 and, if one collapses across countries, only 190 psychologists out of the total sample endorsed using the B-G regularly (3%). Herzberg and Mattar (2008) surveyed 31 "teachers" (including 4 technicians) within the psychology department of one Brazilian university. The university staff may be representative of Brazilian practitioners but extrapolating from a university department to Brazilian psychologists working in the community seems unwise. De Oliveira et al. (2005) did have a sample of Brazilian psychologists (n=35) and surveyed their use of psychological instruments (mostly) available from Brazilian marketers of psychological testing supplies. Two variations of the B-G were endorsed, and both are utilized in assessing young children. One was ranked 2nd most used by 51% of the sample (as highlighted by Piotrowski), the other version was 5th and used by 28% of the sample. The former appears to be a version of Koppitz's method and the latter appears to be based on Aileen Clawson's 1962 book "The Bender Gestalt Visual Motor Test for Children". Bekhit et al. (2005) surveyed 158 British psychologists, but the B-G is not specifically mentioned in the study. Chan and Lee's (1995) survey of psychologists working in Hong Kong is interesting (B-G is ranked 2nd by educational psychologists, 13th for clinical psychologists), but that data is now over 20 years old. Given the trends over the past 20 yrs discussed above, the use of the B-G in Hong Kong in more recent years may be rather different.

Minor concerns (details) of the 30-study review include the following: (a) Smith Gorske et.al. (2010), Palmiter (2004) and Bowet.al. (2002) had no specific mention of nor data regarding the use of the B-G, and (b) Boccaccini and Brodsky (1999) data did not rank the B-G in their table of top 11 tests, thus B-G was at least 12th, but the B-G could have been ranked last.

We did find a few additional studies which could fit into the 30 studies cited by Piotrowski. We included their data in our graphs (see above). Cashel (2002) surveyed 162 child and adolescent psychologists about their test usage and rated the B-G as 7th with 34% not using the B-G at all, and additional 39% using the B-G "rarely" or "some", and 27% using the B-G "frequently" or "always". Unfortunately, the version of specific use of the B-G was not detailed. Ochoa, et al, (2004) in their survey of 223 school psychologists who regularly assessed English-language learner students noted 75.7% used the B-G with a mean rating between "frequently" and "very often". The school psychologists rated the B-G as "somewhat helpful" in their evaluations (mean score) and compared to 58 other measures the B-G ranked 36th in terms of helpfulness. Interestingly, nearly every one of the 58 instruments were rated at least 2 ("somewhat helpful"), so B-G's mean rating of 2.3 is slightly above the mean rating of all 58 instruments. Again, it was not clear how the B-G was utilized in these evaluations. Projective drawings (Draw-a-Person, HTP, and Kinetic Family Drawings) were ranked similarly to the B-G in terms of both frequency of use and helpfulness, so perhaps that is how the B-G was utilized. Thus, in this sample, many school psychologists use the B-G and projective drawings, but the perceived level of helpfulness for evaluation purposes is low compared to other instruments. Rabin, et al, (2005), in their survey of 747 clinical neuropsychologists in US and Canada ranked B-G as 25th with 2% of the respondents using it.

Some additional recent publications offer further depth to the debate over the importance of the B-G in a psychologist testing resource. The earlier publication, Cody & Prieto (2000), found in a survey of 94 APA-accredited clinical and school psychology programs in US and Canada that the B-G was "covered" in 47% of intelligence assessment courses and in 35% of other courses. Unfortunately, "covered" was not well defined. For example, it could have included a reading on the B-G, a review as a historical test, or more comprehensive training as a current assessment tool for clinical assessment of individuals. Childs &Eyde (2002) in their survey of 84 clinical psychology training programs and review of submitted assessment syllabi found 46% of the program included the B-G in assessment programs (but unfortunately no data on which use of the B-G or variation of the B-G was covered in classes). Approximately 12 years later, Ready and Vegue (2014) in a survey of 74 APA-accredited doctoral-level clinical psychology programs found the B-G was not within the top 10 of assessment tools taught within the program regardless of the training philosophy of the program. Norcross, et al, (2006) gathered survey data from 101 fellows associated with various APA divisions to ask their opinions of discredited assessment tools based on their knowledge of peer-reviewed research, clinical practice or professional consensus. That survey found use of the B-G as a screener or assessment of neuropsychological impairment was between "probably discredited" and "certainly discredited" (by mean rating). B-G use as an assessment of personality (e.g., a projective drawing) was considered "possibly discredited" to "probably discredited" (by mean rating).

Conclusions from our review of these 30 studies (and additional studies as cited above) related to use of the B-G are: (a) the use of the B-G has declined over the past 20 years among psychologists in the US, (b) among various types of psychologist evaluations, the B-G is being used even less in forensic and

neuropsychological evaluations, (c) the use of the B-G internationally by clinical psychologists as a clinical evaluation tool is a very small percentage, (d) the minority of psychologists using the B-G in clinical evaluations of individuals may be those who were trained during time when use of projective drawings was more common and (e) recent international use of the B-G appears to be focused, not on clinical evaluations of individuals, but as a tool assessing normal development of children or adolescents or as a tool assessing visual-motor abilities in selected neurological or psychiatric patient populations.

The B-G and its iterations are fascinating as a historical example of psychological test development. The development of the B-G as a psychological projective tool (as opposed to a measurement of visual-motor ability) occurred primarily during periods when relatively few other instruments were available. The B-G's original use, a measure of visual-motor abilities and/or one type of cognitive development in children, remains relevant. However, putting aside the arguments about the psychometrics and scientific backing of projective drawings, we do not find these 30 studies an adequate rationale to consider the B-G as an important clinical assessment tool. Thus, we conclude the B-G should not be taught in clinical psychology graduate programs as a tool for most psychological evaluations of individual patients.

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Rank	Journal	Country	Language
1	Revista de Psicoanalisis	Argentina	Spanish
2	Revista de Neurologia	Spain	Spanish
3	Revista Brasileria de Psiquiatria	Brazil	Eng.,Spani.,Portuguese
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5	Acta Psiquiatricay psicologica de Amercia Laina	Argentina	Spanish
6	Journal of the Medical Association of Thailand	Thailand	English, Thai
7	British Journal of Psychiatry	UK	English
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