



Factor Structure and Normative Update of the Brief Symptom Inventory in College Emerging Adults

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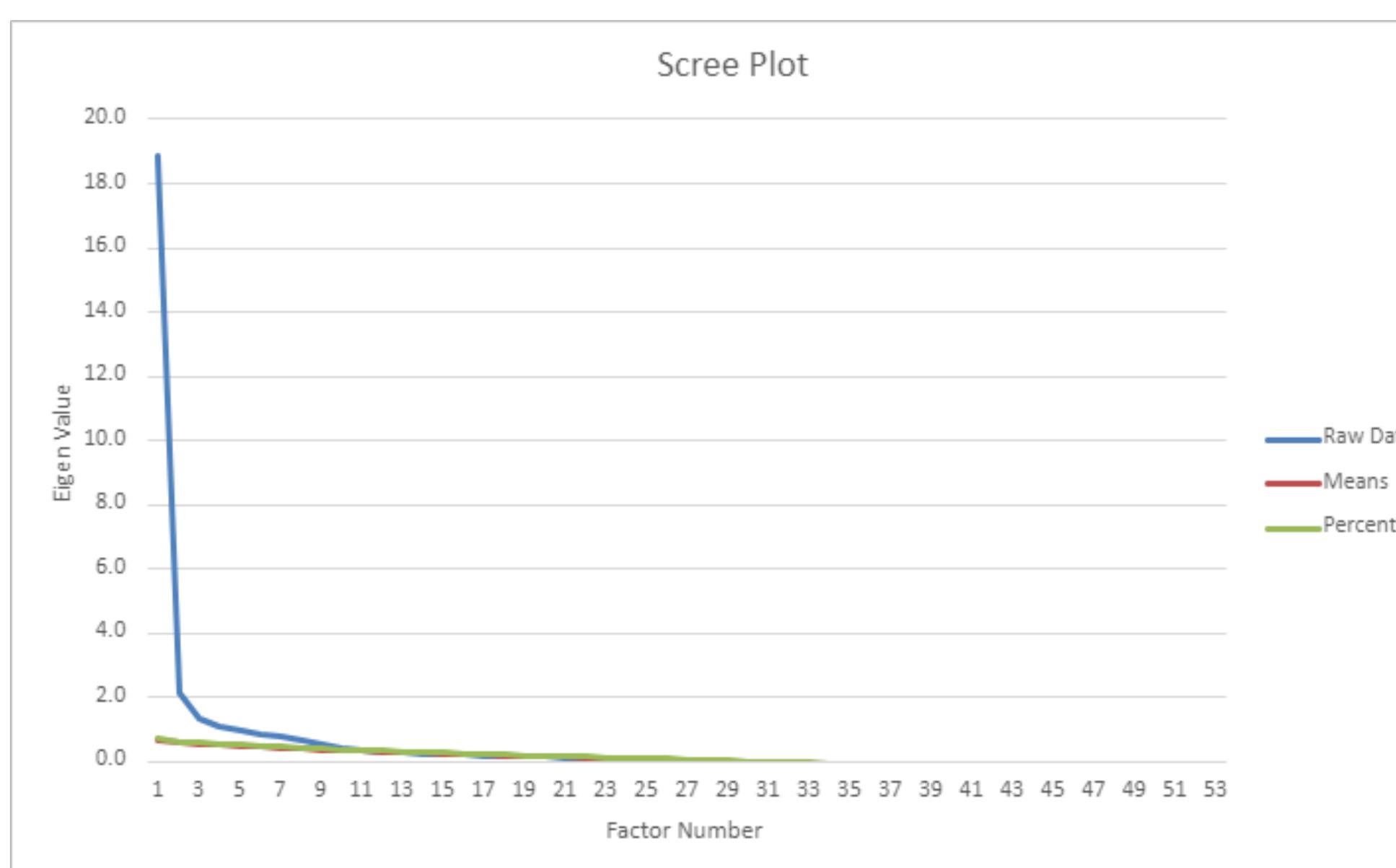
Introduction

The *Brief Symptom Inventory* (BSI; Derogatis, 1975) is a 53-item self-report survey designed to assess psychological symptoms and distress along 9 symptom dimensions (somatization, obsessive compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychotism; Table 1) for psychiatric and non-psychiatric patients. This distress screener produces three global indices of overall distress, with the Global Severity Index (GSI) being the most utilized. Once scored, the three global indices and the 9 symptom dimension scores are then compared to published norms, with four formal norms provided by Derogatis (1993) for psychiatric outpatients, adult non-patients, psychiatric inpatients, and non-patient adolescents. However, norms and interpretation for emerging adults has remained uncertain. Additionally, within the BSI literature, there is strong debate over the BSI's latent factor structure. Uncertain of the initially proposed 9-symptom structure, it could be that a single-factor structure is better supported, possibly indicating that the BSI measures general psychological distress rather than multidimensional symptoms.

Goals:

- To examine and contribute to the literature on the factor structure of the BSI
- Establish an appropriate clinical cut-off score for emerging adults in college to better adapt therapeutic and counseling services to said population
- To compare current GSI means to previously published norms.

Figure 1



Method

The current sample ($n=725$) was obtained by pooling together two recent archival datasets consisting of undergraduates from the same Midwest University. The sample includes 538 female students (74.2%) and 187 male students (25.8%), ranging from 18 to 24 years old ($M=19.44$, $SD=1.35$). A majority of respondents were 1st years (310 freshman, 42.8%), followed by 2nd years, 3rd years, 4th years, and 5th years or beyond. Whites were the most represented racial ethnic group (578, 79.7%) followed by Asian Americans, African Americans, and other racial ethnic groups. Lastly, most students reported never receiving psychological treatment (356, 73.9%), 162 reported past treatment (22.3%) and 27 students reported being currently in treatment (3.7%).

Data analysis plan included an exploratory factor analysis (EFA) in SPSS, specifically principal axis factoring, promax rotation if needed, and the scree plot method for determining how many factors to retain (supplemented with a Monte Carlo simulation--bootstrapping with 1,000 permutations).

We also used *t*-tests to compare GSI means from this sample to previously established norms to examine any deviances or significant differences.

We also referred to Jacobson & Truax's (1991) three formulas for identifying clinically significant change to help determine clinical cutoff scores for the college-enrolled emerging adult population.

Table 1

Brief Symptom Inventory (BSI). Respond regarding the past 7 days, including today, using this scale: 0=Not at All; 1=A Little Bit; 2=Moderately; 3=Quite a Bit; 4=Extremely [Divide total score by 53]	
1.) Nervousness or shakiness inside?	27.) Difficulty making decisions?
2.) Fairness or distractness?	28.) Feeling afraid to travel on buses, subways, or trains?
3.) The idea that someone else can control your thoughts?	29.) Trouble getting your breath?
4.) The feeling that others are to blame for most of your troubles?	30.) Hot or cold spells?
5.) Trouble remembering things?	31.) Having to avoid certain things, places, or activities because they frighten you?
6.) Feeling easily annoyed or irritated?	32.) Your mind going blank?
7.) Pain in the heart or chest?	33.) Numbness or tingling in parts of your body?
8.) Feeling afraid to open spaces?	34.) The idea that you should be punished for your sins?
9.) Thoughts of ending your life?	35.) Feeling hopeless about the future?
10.) Feeling that most people cannot be trusted?	36.) Trouble concentrating?
11.) Poor appetite?	37.) Feeling weak in parts of your body?
12.) Suddenly scared for no reason?	38.) Feeling tense or keyed up?
13.) Temper outbursts that you could not control?	39.) Thoughts of death or dying?
14.) Feeling lonely even when you are with people?	40.) Having urges to beat, injure or harm someone?
15.) Feeling blocked in getting things done?	41.) Having urges to break or smash things?
16.) Feeling lonely?	42.) Feeling very self-conscious with others?
17.) Feeling blue?	43.) Feeling uneasy in crowds?
18.) Feeling no interest in things?	44.) Never feeling close to another person?
19.) Feeling fearful?	45.) Spells of terror or panic?
20.) Your feelings being easily hurt?	46.) Getting into frequent arguments?
21.) Feeling that people are unfriendly or distant?	47.) Feeling nervous when you are alone?
22.) Feeling inferior to others?	48.) Others not giving you proper credit for your achievements?
23.) Nausea or upset stomach?	49.) Feeling so restless you couldn't sit still?
24.) Feeling that you are watched or talked about by others?	50.) Feelings of worthlessness?
25.) Trouble falling asleep?	51.) Feeling that people will take advantage of you if you let them?
26.) Having to check and double-check what you do?	52.) Feelings of guilt?
	53.) The idea that something is wrong with your mind?

Figure 2

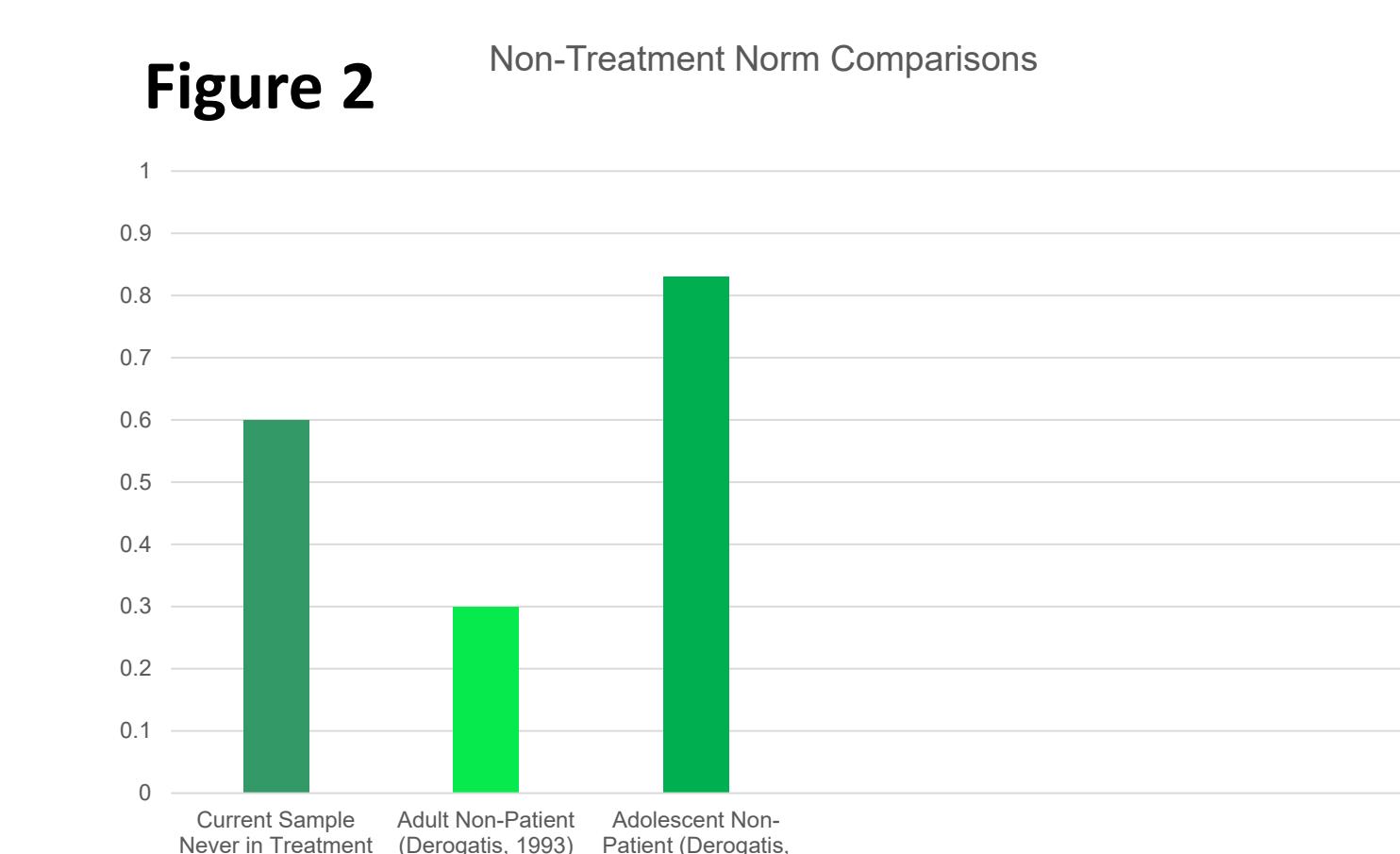
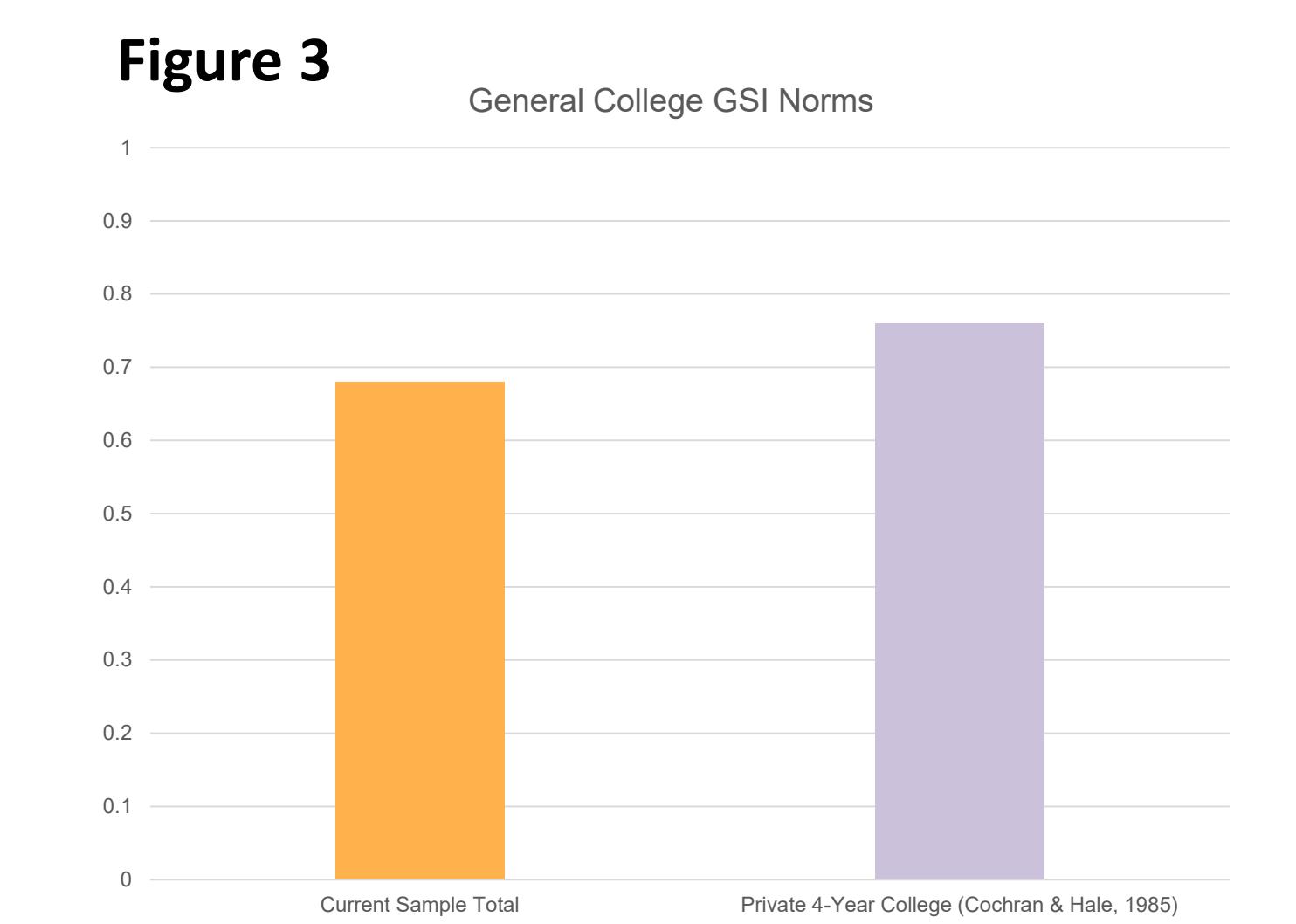


Figure 3



Results

Our EFA procedure seems to support the 1-factor structure model in comparison to the originally proposed 9-factor model (Figure 1). The 1-factor analysis accounts for 36.459% of all variance in the study.

Significant GSI mean differences were found between our sample of non-patient emerging adults and Derogatis' (1993) non-patient adults ($t=13.069$, $p<.000$) and non-patient adolescents ($t=8.380$, $p<.000$) as in Figure 2. Significant differences were also found between Cochran & Hale's (1985) private college sample and ours ($t=2.301$, $p=.022$) as in Figure 3. There were no significant differences between our in-treatment students and Derogatis' in-patient or out-patient sample.

One clinical cut-off score that may be appropriate is 1.59, derived from Jacobson & Truax's (1991) formula B, in comparison to Cochran & Hale's (1985) proposed 1.23.

Discussion

Having an appropriate clinical cutoff score for college-enrolled emerging adults will garner a more informed use of the BSI (e.g., diagnostics, referrals, insurance billing, epidemiology). Researchers and clinicians also need to be aware structural validity of the BSI is population-specific, and reference to relevant group norms is crucial in effective score interpretation. We hope this work aids in serving the mental health assessment and treatment needs of this population.

References

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