Path Analysis of the SCL-90-R: Exploring Use in Outpatient Assessment

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Abstract
The Symptom Checklist 90 Revised (SCL-90-R) is a widely used assessment of mental health pathology. Its factor structure has been called into question by numerous studies. This study assessed a community mental health outpatient sample \((n = 336)\) with the SCL-90-R and analyzed the factor structure. The results indicated that the SCL-90-R measures one large factor, but the test items held together reasonably well when a nine-factor extraction was executed. A shorter 67-item variant, which was a byproduct of this study, is hypothesized as having some key advantages over the original 90-item version. Implications for the assessment of the outpatient population with the SCL-90-R and its variants are discussed.

*Keywords:* factor analysis, SCL-90-R, outpatient, community mental health
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The Symptom Checklist 90-Revised (SCL-90-R; Derogatis, 1994) has been a popular assessment for psychopathology in a variety of clinical settings, including psychiatric outpatient and inpatient. The self-report SCL-90-R was designed to measure nine distinct dimensions of psychopathology (Derogatis & Cleary, 1977a, 1977b). However, this purported nine-factor structure, the instrument’s general utility, and its usefulness as a diagnostic aid have been repeatedly challenged (Bonynge, 1993; Brophy, Norvel, & Kiluk, 1988; Cyr, McKenna-Foley, & Peacock, 1985; Pederson & Karterud, 2004; Rauter, Leonard, & Swett, 1996). The instrument’s predecessor, the SCL-90 (Derogatis, Lipman, & Covi, 1973), which like the SCL-90-R was designed to measure nine factors, has experienced similar questions, scrutiny, and evaluation to determine what mental health characteristics it actually captures (Hoffman & Overall, 1978).

The SCL-90-R is a 90-item self-report instrument designed to assess mental health symptoms across nine subscales generally associated with mental health pathology and three global scales (Derogatis, 1992). The nine subscales of the SCL-90-R include (a) Somatization, (b) Obsessive Compulsive, (c) Interpersonal Sensitivity, (d) Depression, (e) Anxiety, (f) Hostility, (g) Phobic Anxiety, (h) Paranoid Ideation, and (i) Psychoticism (Derogatis, 1992). The three global scales are the Global Severity Index (GSI), the Positive Symptom Distress Index (PSDI), and the Positive Symptom Total (PST; Derogatis, 1992). Respondents are asked to rate the severity of their symptoms on a scale of 0 to 4 (0, not at all; 1, a little bit; 2, moderate; 3, quite a bit; or 4, extreme; Derogatis, 1992). The instrument has been found to have high construct validity as well as high concurrent validity with similar instruments (Derogatis & Cleary, 1977a). The SCL-90-R can be administered in a paper-and-pencil format or through a
computer-based method (Schmitz, Hartkamp, Brinschwitz, Michalek, & Tress, 2000). After assessing a sample of psychosomatic outpatients ($n = 282$), Schmitz, Hartkamp, Brinschwitz, et al. (2000) found noticeable, but small, differences between these two SCL-90-R administration delivery methods.

**Statement of the Problem**

Contemplating the number of studies challenging the factor structure and general utility of the SCL-90-R and this instrument’s widespread use and popularity in a variety of clinical settings, there appears to be a clear need to determine the true factor structure and utility of the SCL-90-R and to develop implications for this instrument’s use. A variety of studies have demonstrated that the factor structure of the SCL-90-R is not consistent with the original nine-dimension design and how a great deal of variance is explained by the first extracted factor. While a number of these studies have suggested areas in which and circumstances under which this instrument can be successfully deployed (e.g., brief screening instrument), few provide detailed information on how individual items and groups of items can be interpreted to maximize utility of the SCL-90-R. Additionally, there is a paucity of SCL-90-R research regarding assessment with community mental health outpatient samples and with those diagnosed with co-occurring disorders.

Numerous researchers have called for further experiments and analyses of the SCL-90-R characteristics, including specific populations, disorders, and research targeted toward the discriminatory properties of the subscales (Buckelew, Burk, Brownlee-Duffeck, Frank, & DeGood, 1988; Eich et al., 2003; Elliott et al., 2006; Gilliss, Moore, & Martinson 1997; Kaplan et al., 1998; Recklitis, Licht, Ford, Oeffinger, & Diller, 2007). The research questions explored by the current study correspond to the calls for further research in other studies both...
broadly and in many specific facets. Recklitis et al. (2007) noted that using only one criterion measure in their study was a major limitation, whereas the current study uses several. The importance of identifying new subscales in the SCL-90-R is a key aspect of this study, which addresses the call for further research issued by Gilliss et al. (1997).

The factor structure and the usefulness of the SCL-90 and SCL-90-R have been called into question by some studies (Pederson & Karterud, 2004; Rauter et al., 1996) yet supported by others (Evenson, Holland, Mehta, & Yasin, 1980). While a substantial number of studies have supported a unidimensional factor structure for these instruments (Cyr et al., 1985; Zack et al., 1998), many studies have supported these instruments’ ability to discriminate between various mental health symptoms despite the presence of a factor structure that is incongruent with the original design specifications (e.g., Paap et al., 2011; Schmitz, Hartkamp, Kruse, et al., 2000).

Secondary Sources –

List the secondary source in the reference list.

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For example –

(T. Smith, 2001)
(R. Smith, 1994)
References


Here is an example of content that is not quoted compared to “content that is quoted” (Grande et al, 2014, p. 42).

Grande et al. (2014) provided an example of content that is not quoted compared to “content that is quoted” (p. 42).

Grande et al. (2014) noted the following:

This study had a sufficient total sample size \( n = 243 \) from which to draw conclusions, however, the intended sample \( n = 352 \) was much larger. Given that the missing participants likely suffered from severe disorders, there is a distinct possibility that important data was not captured. (pp. 13-14)