Content Validity of the Geriatric Depression Scale in Inpatient Health Care Settings

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Abstract—**The content validity of the Geriatric Depression Scale (GDS) for use in inpatient health care settings was evaluated. Clinical experience has shown that one or more questions may not be appropriate in such settings. These questions ask about behaviors or feelings with which the examinee may not be able to identify with because they have been in an inpatient setting during the past week. Twenty-five Subject Matter Experts (SMEs) evaluated the GDS-30 as to whether each item appropriately assesses the construct of depression for inpatients in a medical care setting. SMEs were identified by an online search of the Florida Division of Medical Quality Assurance database; inclusion criteria are presented. Nineteen SMEs held a Ph.D. and six held a Psy.D. Years of post-licensure practice experience ranged from 10 to 48 years with a mean of 23.12 years (*SD* = 10.07). Using the Content Validity Ratio, four questions emerged as inappropriate (statistically significant at, or below, an alpha level of .025). The lack of content validity of these questions necessitates their omission when psychometrically assessing depression in elderly inpatients. Recommended revised cutoff values are presented. Utilizing the recommended modification to the GDS presented here should reduce false positives when psychometrically assessing depression in elderly inpatients.**

Keywords-GDS; inpatient; medical settings; elderly; depression

I. Introduction

Depression is common in elderly individuals, with estimates reported to be approximately 12% in community samples. These estimates increase significantly for elderly patients in general hospital settings, ranging from 5-58% with a mean of 28% [1]. Despite the high prevalence of depression for geriatric patients, Onishi et al. [2] suggested that depression is underestimated and undertreated, particularly in inpatient medical care settings. The authors attributed this to the tendency to relate the depressive symptoms to normal aging and physical illnesses.

To assist in the accurate diagnosis of depression in geriatric clients, psychometric screening scales must address the specific needs of aging individuals. Despite several instruments available for assessing depression, the widely used Geriatric Depression Scale (GDS) [3, 4] was the first to make special considerations for the needs of elderly persons by removing somatically and cognitively loaded questions [5]. The simple design of the GDS allows questions to be answered in a less demanding "yes/no" format instead of a Likert or multiple-choice response style.

The GDS was originally developed and validated as a 30-item instrument [3]. Sheikh and Yesavage [6] designed a shorter version based on the observation that the elderly are easily fatigued and distracted when completing extended and tedious scales. They were able to cut the scale in half by selecting items that most significantly correlated with symptoms of depression from past validation studies of the GDS-30.

D'Ath et al. [7] maintained that the GDS-15 was still too cumbersome to administer in primary care settings and developed yet shorter versions; 10-, 4-, and 1-item scales. However, subsequent research by Almeida and Almeida [8] reported that versions shorter than 10-items are "less reliable and informative" (p. 863) for detecting depressive episodes in the geriatric population.

Heidenblut and Zank [5] reported that the intended population of the GDS was community-dwelling geriatric clients. Thus, despite the utilization and effectiveness of the GDS in medical settings, certain questions in the GDS may be inappropriate for inpatients due to the constraints associated with being hospitalized. Therefore, the ability to correctly identify depression could be impacted by the inclusion of questions that are not suitable for inpatients.

The standardized instructions for the GDS call for the patient to choose the best answer for how they have felt over the past week. When using the GDS in inpatient medical care settings the authors have frequently encountered statements such as, "It really doesn't apply because I've been in the hospital during the past week" to some of the questions. Responses similar to this indicate that there may be questions on the GDS that are inappropriate when considering the time frame in the standardized instructions.

The purpose of this study was to examine the content validity of the GDS for assessing depression in elderly patients who have been inpatients during the past week. It was hypothesized that one or more questions are not valid for use in inpatient medical care settings.

II. Method

A. Participants

Subject Matter Experts (SMEs) were 25 (12 males and 13 females) clinical psychologists actively practicing in Central Florida. Expert was operationally defined as: (1) graduated from an APA accredited doctoral program in clinical psychology (Ph.D. or Psy.D.), (2) licensed by the state to practice clinical psychology, (3) minimum of 10 years of practice following licensure, (4) routine use of psychometric measures, and (5) practice focuses on adult clientele. The study was approved by the university's Institutional Review Board and all participants provided documented informed consent.

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The age range of the SMEs was 45 to 76 years (M = 56.32, SD = 8.55); males 46 to 76 years (M = 60.42, SD = 8.78) and females 45 to 67 years (M = 52.54, SD = 6.58). Years of post-licensure practice ranged from 10 to 48 years (M = 23.12, SD = 10.07); males 10 to 48 years (M = 27.92, SD = 11.35) and females 12 to 35 years (M = 18.69, SD = 6.36). Nineteen SMEs held a Ph.D. and six held a Psy.D. Racial demographics were: Black/African American (n = 1, 4%); Hispanic/Latino (n = 1, 4%); and White, non-Hispanic (n = 23, 92%).

B. Materials

The GDS-30 was presented via an electronically delivered experimental survey. The instructions to the SMEs were: "When considering the test directions to the patient (i.e., 'Please choose the best answer for how you have felt over the past week'), please rate each item below as to whether you believe it appropriately assesses the construct of depression of inpatients in a medical care setting. Please keep in mind that such persons have been an inpatient during 'the past week'." The SMEs had two rating options: "Appropriate" and "Not Appropriate". A demographic questionnaire developed specifically for this study was included at the end of the experimental survey in accordance with the structure recommendations of Dillman, Smyth, and Christian [9].

C. Procedures

SMEs were identified by an online search of the Florida Division of Medical Quality Assurance database. Initial search criteria were for licensed clinical psychologists practicing in Central Florida. Secondary search criteria were: (1) all prospective SMEs' license status be "Active"; (2) practitioners must not have an initial license issue date within the prior 10 years; and (3) e-mail addresses must be included in the practitioners' profiles. Seventy-six prospective SMEs were identified and an initial invitation was sent via e-mail. A follow-up e-mail was sent three weeks later. SME identities were blind to the investigators.

III. RESULTS

A. Questionnaire Response Rate

Seventy-six e-mail invitations were sent. Five e-mails were returned as non-deliverable due to inactive or incorrect e-mail addresses, resulting in a potential SME pool of 71. Of the 71 possible participants, 21 completed the electronic questionnaire following the first e-mail invitation. After the follow-up e-mail invitation four additional SMEs completed the questionnaire. The observed response rate of 35.21% was considerably higher than the typical online response rate (10%-20% range) reported by Jackson [10].

B. Content Validity

Content validity was assessed using the Content Validity Ratio (CVR) [11] with significance compared to the recalculated critical values presented by Wilson, Pan, and Schumsky [12]. As can be seen in Table 1, four questions (2, 12, 20, and 28) of the 30-item GDS were rated by the SMEs as not appropriate for use with elderly persons in inpatient health care settings with statistical significance at, or below, an alpha level of .025.

IV. DISCUSSION

The purpose of this study was to assess the content validity of the GDS when used in inpatient settings. It was hypothesized that one or more questions would not be valid for inpatient use. The data supported this hypothesis. Four items on the GDS-30 (2, 12, 20, and 28) were identified as inappropriate for use with elderly persons in inpatient medical settings. Two items (2 and 9) would thus be inappropriate for use when using the GDS-15. Based on the data, it is recommended that these questions be omitted when performing assessments within inpatient settings.

As a result of omitting GDS items, it is necessary to adjust cutoff values. The cutoff for depression using the GDS-30 has

TABLE I. SME RATINGS (APPROPRIATE 'A'; NOT APPROPRIATE 'NA') AND CONTENT VALIDITY RATIOS BY QUESTION

Question	A (n)	NA (n)	CVR
1. Are you basically satisfied with your life?	22	3	-.76
2. Have you dropped many of your activities and interests?	4	21	.68***
3. Do you feel that your life is empty?	21	4	-.68
4. Do you often get bored?	16	9	-.28
5. Are you hopeful about the future?	24	1	-.92
6. Are you bothered by thoughts you can't get out of your head?	24	1	-.92
7. Are you in good spirits most of the time?	21	4	-.68
8. Are you afraid that something bad is going to happen to you?	19	6	-.52
9. Do you feel happy most of the time?	22	3	-.76
10. Do you often feel helpless?	23	2	-.84
11. Do you often get restless and fidgety?	20	5	-.60
12. Do you prefer to stay at home rather than go out and do things?	7	18	.44*
13. Do you frequently worry about the future?	22	3	-.76
14. Do you feel you have more problems with memory than most?	23	2	-.84
15. Do you think it's wonderful to be alive now?	16	9	-.28
16. Do you feel downhearted and blue?	25	0	-1.0
17. Do you feel pretty worthless the way you are now?	21	4	-.68
18. Do you worry a lot about the past?	23	2	-.84
19. Do you find life very exciting?	13	12	-.04
20. Is it hard for you to get started on new projects?	4	21	.68***
21. Do you feel full of energy?	17	8	-.36
22. Do you feel that your situation is hopeless?	25	0	-1.0
23. Do you think that most people are better off than you?	23	2	-.84
24. Do you frequently get upset over little things?	24	1	-.92
25. Do you frequently feel like crying?	24	1	-.92
26. Do you have trouble concentrating?	24	1	-.92
27. Do you enjoy getting up in the morning?	21	4	-.68
28. Do you prefer to avoid social occasions?	6	19	.52**
29. Is it easy for you to make decisions?	24	1	-.92
30. Is your mind as clear as it used to be?	23	2	-.84

*p < .025, **p < .005, ***p < .001; one-tail

yielded the optimal sensitivity and specificity when a score of 11 is used [3, 4]. For the GDS-15 the consensus in the literature supports a cutoff of 5 [13, 14, 15]. Based on the present data, it is recommended that a score of 7 on the GDS-30 and a score of 3 on the GDS-15 be used as new cutoff values for inpatient assessments.

A review of Table 1 will give the reader a clear understanding of the inappropriateness of the questions showing a lack of content validity. Simply put, these questions are context dependent and do not take into account the limitations of the setting in which the patient is taking the test (i.e., the patient has been in the hospital during the "past week" time frame presented in the test instructions).

The present data clearly indicate a shortcoming of utilizing the GDS (in its current form) in inpatient health care settings. Omitting the questions lacking in content validity and utilizing the proposed cutoff scores will dramatically reduce the likelihood of obtaining false positives for depression. As practitioners serving inpatients in health care settings, the focus should be on the most effective diagnosis and treatment for our patients. Ultimately, as responsible practitioners, we must ask ourselves a simple question: how many elderly individuals have been, or could be, mislabeled as depressed when, in fact, they provide appropriate responses confounded by the constraints associated with their inpatient status? Such false positives can be avoided by implementing the GDS modifications recommended here. Understanding the validity issues associated with specific questions on the GDS will allow practitioners to better serve their geriatric inpatients and avoid inaccurate identification of depression.

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