

Assessment of Trauma Exposure and Post-Traumatic Stress in Long-Term Care Veterans: Preliminary Data on Psychometrics and Post-Traumatic Stress Disorder Prevalence

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This article reports preliminary data on trauma and post-traumatic stress disorder (PTSD) prevalence, as well as test psychometrics, among 35 cognitively intact veterans residing in long-term care settings. Participants received a traumatic event screening, the Mini-Mental Status Examination, Combat Exposure Scale (CES), PTSD Checklist (PCL), and Mississippi Combat PTSD Scale (M-PTSD). Results demonstrated adequate reliability for the CES, PCL, and M-PTSD for use in these settings, with several significant intercorrelations. A high prevalence of trauma exposure was found, in particular combat. Based on the PCL and M-PTSD, although most veterans did not meet full PTSD diagnostic criteria, a moderate proportion met partial criteria. The need for assessment and treatment of trauma exposure and PTSD in Veterans Affairs long-term care settings is emphasized.

Introduction

Extensive information exists on the prevalence of post-traumatic stress disorder (PTSD) in community-residing combat veterans.^{1,2} However, despite PTSD's often chronic course, sometimes lasting a lifetime,³ there is little information regarding PTSD assessment in veterans residing in extended care residence.⁴ This preliminary study examined the reported trauma exposure and PTSD in a predominantly older sample of veterans residing in long-term care, with data on the psychometrics of trauma exposure and PTSD instruments and PTSD prevalence in this sample.

In general, research has shown that combat-related PTSD is a significant and long-lasting problem for some veterans, with up to 15% of male Vietnam veterans meeting current and 31% meeting lifetime PTSD diagnostic criteria.² Moreover, an additional 11% of male Vietnam veterans suffer from partial (sub-syndromal) PTSD, which has received recent attention.^{5,6} Individuals with partial PTSD can have clinically significant symptoms that affect their psychological functioning, physical health, and social relations, and thus they may be in need of intervention.

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Special considerations may need to be made when assessing older (i.e., ≥ 60 years) individuals who have survived trauma exposure,⁷ particularly with regard to special needs in long-term care settings.⁸ A few case studies of older adults with exposure to combat or other non-military-related traumas suggest that stressors like illness, loss of significant others, and retirement, as well as institutionalization itself, may interact negatively with unresolved trauma to maintain or reawaken psychological distress in later life.⁹⁻¹¹ Recent research demonstrates that older veterans with PTSD in general may evidence decreased psychiatric problems as compared to their younger counterparts, but use significantly more Veterans Affairs (VA) primary care medical services.¹² Additionally, it has been suggested that organic age-related changes in the brain (e.g., dementia processes) may exacerbate underlying PTSD symptomatology.^{13,14} Assessing PTSD in older veteran long-term care residents and establishing preliminary estimates of PTSD prevalence is therefore needed.

This topic's significance is highlighted by the fact that the demographic contour of the U.S. population is shifting, with a substantial increase in the proportion of individuals living into older adulthood.^{15,16} The veteran population is especially affected by this trend, with male veterans being older on average than the overall adult male population.¹⁷ Male veterans 65 years and over are expected to increase from 26% of the male veteran population in 1990 to more than 40% by the year 2010.¹⁷ As this population shift continues, it can be anticipated that more services for older adult veterans, including those with PTSD residing in long-term care settings, will be required.

This study's purpose was twofold: (1) to provide information on the reliability and validity of several trauma and PTSD instruments among a predominantly older sample of veterans in long-term care and (2) to provide preliminary estimates on how prevalent trauma exposure and PTSD are in this population. Despite being untested previously, it was expected that the assessment measures would evidence adequate reliability in this sample. Furthermore, we expected that most of this primarily older veteran sample would fail to meet full PTSD diagnostic criteria (perhaps previously meeting full criteria), but would still evidence clinically significant symptoms, from research exploring partial PTSD in older community-residing veterans.¹⁸

This investigation is important, providing a crucial first step in measuring PTSD in long-term care residents. Although PTSD is likely not as rampant as depression in these settings,¹⁹ it is thought to be a problem that requires recognition, assessment and intervention, especially in those facilities with high concentrations of trauma survivors.

Method

Participants

The initial sample consisted of 51 male residents from two settings at a Department of Veterans Affairs in the Western United States: A nursing home (NH; $n = 38$) and an extended care psychiatric unit (ECPU; $n = 13$). This sample was relatively small, given the difficulty researchers have obtaining access to these settings and the longer periods of time patients reside there (keeping new patient flow to a minimum). Furthermore, two veterans refused to be interviewed. Additionally, participants with Mini-Mental State Examination (MMSE)²⁰ scores below 24 (suggesting cognitive impairment which could interfere with study performance; $n = 22$) were considered for exclusion. However, only 14 (of these 22) participants were actually excluded for having obvious cognitive impairment, since the remaining 8 obtained low scores¹⁷⁻²³ primarily due to paralysis and/or difficulty in using their hands. The remaining sample included 25 NH and 10 ECPU participants.

NH and ECPU groups were compared for demographic and dependant variables (described below) using χ^2 analyses and t test. No significant ($p < 0.05$) differences were found for demographic variables (age, race, marital status, education), number of trauma types endorsed, or total scores of any psychometric measures (except for higher Mississippi PTSD Scale scores for the ECPU group; for nonsignificant variables, effect size w reached the "medium" convention only for race, education, and marital status). Despite some possible between-group differences (based on effect sizes), groups were nonetheless combined into a larger group ($N = 35$, or 68.6% of the original sample), because of the similarity in facility type and relatively small group sample sizes. (Effect sizes represent the strength of association between variables, ranging from "small" to "medium" to "large.")²¹

Demographic information on the combined sample was obtained via patient medical records and confirmed upon interview. There were no significant ($p < 0.05$) differences between those who did and did not participate by setting, education, race, or marital status. However, nonparticipants (mean = 76.4, $SD = 6.3$) were older than participants (mean = 69.4, $SD = 10.6$), $t(45.3) = 2.9$, $p < 0.01$ (effect size d was "medium").

The majority of participants were Caucasian ($n = 27$; 77.1%), with 6 (17.1%) African American and 2 (5.8%) Asian or American Indian. Age averaged 69.43 years ($SD = 10.49$); 45 participants (88.2%) were at least 60 years old, whereas 6 (11.8%) were between 49 and 56 years old. More than one-third ($n = 12$; 34.3%) were married, 11 (31.4%) were divorced, 9 (25.7%) never married, and 3 (8.6%) widowed. More than one-half ($n = 18$; 56.3%) had a high school education or less, 8 (25.0%) had attended college, and 6 (18.8%) graduated from college. Most served in the Army ($n = 21$; 60.0%) or Navy ($n = 8$; 22.9%). The majority served in World War II ($n = 15$; 42.9%), the Korean War ($n = 8$; 22.9%), or Vietnam War ($n = 9$; 25.7%).

Procedure

All instruments were clinician-administered (instead of patient-administered, because of self-administration problems anticipated in this primarily older group of patients). Veterans were first administered a fairly behavioral-specific, brief trauma

exposure screening, assessing lifetime exposure (inquired "yes or "no") to 12 types of traumatic experiences, corresponding to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) PTSD's Criterion A. Events included: natural disaster, transportation accident, serious work accident, life-threatening illness/injury, child and adult physical and sexual assault/abuse, combat, captivity, confrontation with sudden or violent death, and assault with a weapon.

Participants acknowledging traumatic event exposure were subsequently administered the PTSD Checklist (PCL),²² based on the index trauma reported (or most disturbing trauma, in cases of multiple traumas endorsed). All participants were administered the Combat Exposure Scale (CES),²³ and Mississippi Scale for Combat-Related PTSD (M-PTSD).²⁴

Measures

MMSE

The MMSE²⁰ is a 30-item, widely used screen for cognitive disorder. The MMSE assesses orientation to time and place, short-term memory, constructional capacities, and language use. Scores range from 0 through 30, with one point assigned to each successfully completed task. Test-retest and interrater reliabilities in samples of psychiatric and neurological participants are high ($r = 0.89$ and 0.82 , respectively).²⁰

CES

The CES²³ is a seven-item, single factor measure assessing combat exposure severity. Items inquire about the frequency of various combat experiences (e.g., receipt of or witnessing someone hit by enemy fire, conducting combat patrols, etc.). Total scores range from 0 to 41, with higher numbers indicating greater combat exposure. High CES reliability has been reported of 0.85 (coefficient α) and 0.97 (test-retest reliability),²³ but it has not been examined in older long-term care residing veterans.

PCL

The PCL²² contains 17 items corresponding to the DSM-IV criteria for PTSD.²⁵ Participants indicate past-month symptom severity using a 5-point scale from 1 (not at all) to 5 (extremely). The PCL demonstrates excellent internal consistency (0.94) and test-retest reliability (0.88, for a 1-week interval).^{26,27} Sensitivity in identifying PTSD ranges from 0.78 to 0.94, and specificity ranges from 0.83 to 0.86,^{22,26} with significant convergent validity against established PTSD instruments.²⁷ The PCL's psychometric properties have not been examined in this study's population of interest.

The PCL was explored continuously for both severity (scores range from 17-85) and categorically (full, partial, or no PTSD) to provide an estimate of disorder.²⁸ Categorically, a symptom was scored present if it was rated 3 or higher. A full PTSD diagnosis involved at least one DSM-IV Criterion B (reexperiencing), three C (avoidance/numbing), and two D (hyperarousal) symptoms. Partial PTSD was indicated in one of two ways: (1) criterion B, and either C or D was met; or (2) criterion B was met, with at least one symptom each of C and D.²⁸

M-PTSD

The M-PTSD²⁴ is a 35-item measure of PTSD symptoms and associated features. Items are rated on a 5-point Likert scale

and scores range from 35 to 175. The M-PTSD has high internal consistency (0.94), test-retest reliability (0.97), sensitivity to PTSD (0.93), and specificity (0.89) in clinical samples.²⁴ A diagnostic cutoff score of 89 has been supported.² The M-PTSD's psychometric properties have not been examined in this study's population of interest.

Results

First, trauma history was assessed with the brief trauma exposure screening. The majority of participants ($n = 31$, 88.6%) reported experiencing at least one type of trauma during their lifetime. Specifically, 4 (11.4%) reported experiencing no trauma, 10 (28.6%) endorsed one trauma type, 7 (20.0%) endorsed two trauma types, and 14 (40.0%) endorsed three or more trauma types. Frequencies of individual types of traumas are shown in Table I, with combat exposure being reported most frequently.

It should be noted that two of the four participants who endorsed no trauma on the screening (including the single war trauma question) did endorse combat experience on the more behavioral-specific CES. Research has supported more liberal (and presumably more accurate) trauma exposure reporting when queries are more specific.²⁹

Means, standard deviations, and correlations between self-report measures are presented in Table II. Neither the number of traumatic experience types nor combat exposure severity was significantly related to PTSD measure scores. The correlation between PCL and M-PTSD scores was significant ($r = 0.70$, $p < 0.001$), suggesting agreement between the two measures of PTSD in this sample. Exposure to combat was "light," with 22 (62.9%) scoring in this range. However, 7 (20.0%), 5 (14.3), and 1 (3.9%) reported combat exposure classified as "light-moderate," "moderate," and "heavy," respectively. These classifications are derived from the CES scoring system.²³

Second, psychometric properties of the CES, M-PTSD, and PCL were examined in this sample. These measures demonstrated adequate internal consistency, with α coefficients of 0.84 (CES), 0.78 (M-PTSD), and 0.87 (PCL). Split-half reliability was

also good, with Guttman split-half coefficients of 0.88 (CES), 0.77 (M-PTSD), and 0.81 (PCL). Thus, these measures performed reliably in this long-term care sample.

We conducted a post hoc power analysis²¹ on the intercorrelations to better interpret our findings, given the dearth of significant relationships, and the small sample size. None of the nonsignificant correlations possessed adequate (i.e., 80%) power. Among the nonsignificant correlations, effect sizes for the Trauma-CES, and Trauma-PCL correlations approached a "medium" effect size, only requiring the addition of approximately 64 subjects on average to achieve adequate power. However, the three remaining effect sizes were "small," requiring an average of nearly 200 subjects per analysis to achieve adequate power. This analysis suggests that at least some of the nonsignificant correlations may be due to the lack of true relationships, rather than a sample too small to detect true relationships.

Third, based on suggested PTSD diagnostic scoring criteria described earlier, the prevalence of full and partial criteria on the PCL revealed that 24 veterans (of 32 completing the PCL; 75.0%) did not meet the threshold for criteria. Three (9.4%) met full diagnostic criteria, and an additional five (15.6%) met partial PTSD criteria. Overall, the percentage of veterans whose scores exceeded the cutoff for a PTSD diagnosis on the M-PTSD was 4 (out of 34), or 11.8%. For M-PTSD and PCL agreement, both instruments classified 26 (of 34; 76.5%) respondents as non-PTSD diagnosed, with some disagreement on positive cases (see Table III).

Discussion

This study highlights trauma exposure and PTSD assessment findings in a predominantly older sample of veterans residing in extended care settings. Evidence from psychometric analyses supported the use of several established trauma exposure/PTSD measures in this population. Additionally, results provided preliminary information on PTSD prevalence in this population. As measured by the M-PTSD and PCL, only a small proportion of veterans appeared to meet criteria for PTSD. However, several veterans were experiencing subthreshold PTSD. Consistent with other research,⁹ this study indicates that those exposed to trauma may continue to experience symptoms of PTSD decades later.

This study's PTSD prevalence rates were relatively low. In fact, previous research has indicated that trauma exposure and PTSD are less frequently reported in older than younger adults, possibly because of a decreased likelihood that older adults will accurately label, acknowledge, or report events as traumatic.³⁰ Additional explanations for our low prevalence rates may include: (1) PTSD may decline as mild cognitive impairment begins or intensifies; (2) the data may represent a selection bias in that the majority of older veterans with PTSD may have already died and this group may represent a skewed sample of healthier individuals; and (3) the PTSD measures may be capturing other forms of psychopathology that are comorbid with PTSD.³¹

Interestingly, we failed to reveal a significant relationship between the number of trauma types endorsed and PTSD severity. This finding is in contrast with research demonstrating that trauma severity strongly predicts PTSD.³² It should be noted,

TABLE I

FREQUENCY OF SPECIFIC TRAUMATIC EVENTS IN THE COMBINED EXTENDED CARE PTSD SAMPLE ($N = 35$)

Type of Event	No. of People	Percent of Sample
Combat/war zone	19	54.3
Experienced life-threatening injury/illness	17	48.6
Assaulted with a weapon	11	31.4
Transportation accident	11	31.4
Physically assaulted	8	22.9
Natural disaster	5	14.3
Confronted a sudden or violent death	3	8.6
Other accident	3	8.6
Physically beaten as a child	1	2.9
Touched in a sexual way as a child	1	2.9
Sexually assaulted	0	0
Held in captivity	0	0

TABLE II
MEANS, STANDARD DEVIATIONS, AND CORRELATIONS BETWEEN TRAUMA/PTSD SELF-REPORT MEASURES

	Mean	SD	Trauma	CES	PCL	M-PTSD
Trauma	2.26	1.58	—			
CES	6.83	8.68	0.27 (n = 35)	—		
PCL	27.56	11.04	0.28 (n = 32)	0.22 (n = 32)	—	
M-PTSD	71.12	16.79	0.20 (n = 34)	0.15 (n = 34)	0.70* (n = 31)	—

* p < 0.001.

TABLE III
AGREEMENT IN NUMBER OF PARTICIPANTS MEETING PTSD CRITERIA BETWEEN THE PCL AND M-PTSD (N = 34)

	PCL		
	Full PTSD	Partial PTSD	No PTSD
M-PTSD			
Full PTSD	1	2	1
No PTSD	2	2	26

however, that some of our trauma severity-PTSD relationships may have been significant with a slightly larger sample size.

This study has significant clinical and potential policy implications. To make an accurate diagnosis in this population, standardized PTSD assessments with established psychometric properties should be used. This point is highlighted by the fact that mental disorders in nursing home patients are frequently undiagnosed, misdiagnosed, or diagnosed in a way that obscures treatable conditions.³³ Older adults living in institutional care with PTSD may be overlooked because their symptoms (or medication effects) may be confused with dementia or psychosis, thus complicating treatment.

There is also a need for new standardized PTSD assessment instruments for combat veterans who are more severely cognitively impaired or unable to communicate verbally. The importance of adapting standard measurements used in younger populations for use with older, medically frail or cognitively impaired older adults has been discussed.^{34,35} For example, in self-report assessments, the font, spacing, and shading of questionnaires are often altered for easier reading.

Although psychometric analysis indicated that the PCL and M-PTSD are potentially useful as screening instruments, their format may not be easily understood by this population. Some specific problems with these measures include a complicated M-PTSD response format, with response options shifting direction and wording (necessitating our use of response cards on large poster boards, cumbersome for the interviewers and potentially confusing and irritating for the veterans). Additionally, the PCL's 5-point scale can be difficult for the older cognitively impaired to understand than a "yes/no" format. However, a dichotomous response format may be nonspecific or insensitive to genuine symptomatology. Thus, we suggest that a 3-point scale might be more easily administered and understood (e.g., "not at all/moderate/severe" or "not at all/once per week or less/several times per week"). In addition, since many patients

residing in these settings have limited cognitive abilities and/or the presence of aphasia, the length of self-reports and interviews needs to be limited.

Reliable assessment in this population is sorely needed, since accurate diagnosis could lead to treatment that would reduce patient disability and staff/family burden. To facilitate diagnosis, additional sources of information on traumatic exposure and PTSD should also be identified, such as observational measures, existing medical records, and collateral reports. Objective measures, such as observer or physiological measures, should be established. Existing medical records should be examined for history of combat or other traumatic exposure, as well as related psychological distress. Thus, a multimodal assessment of PTSD may be especially necessary with this population.

As noted earlier, since the graying of America is particularly affecting the population of veterans, the VA administration may need to consider modifying current PTSD service delivery methods for veterans in long-term care settings. Planning for this influx of veterans with appropriate service provision in mind is important, given the growing demand for VA care in this group, and especially since older persons often remain in long-term care over many years.

Several limitations of this study should be considered. Notably, the sample size was small, which limits the strength of our conclusions and generalizability of our findings. Data were collected retrospectively and thus there may be a recall bias. Additionally, PTSD measurement was based solely on self-report responses, and thus the range of individuals with cognitive impairment was restricted. Next, participants varied in terms of the extent of traumatic experiences endorsed, possibly introducing error variance when reporting on a "trauma sample." Last, we were unable to assess for test-retest reliability of the measures. Future studies should examine the feasibility of behavioral observations in the measurement of PTSD in those with moderate to severe cognitive impairment.

The present study represents an initial step toward examining PTSD in veterans residing in extended care settings or with mild cognitive impairment. The findings highlight the need for PTSD identification in older veterans.

References

- Centers for Disease Control: Health status of Vietnam veterans. *JAMA* 1988; 259: 2701-19.
- Kulka RA, Schlenger WE, Fairbank JA, et al: Trauma and the Vietnam War Generation: Report of Findings from the National Vietnam Veterans Readjustment Study. New York, Brunner/Mazel, 1990.
- Falk B, Hersen M, Van Hasselt V: Assessment of PTSD in older adults: a critical review. *Clin Psychol Rev* 1994; 14: 383-415.

4. Cook JM, Cassidy EL, Ruzek JI: Aging combat veterans in long-term care. National Center for PTSD. *Clin Q* 2001; 10: 25-9.
5. Schützwohl M, Maercker A: Effects of varying diagnostic criteria for posttraumatic stress disorder are endorsing the concept for partial PTSD. *J Trauma Stress* 1999; 12: 155-65.
6. Stein MB, Walker JR, Hazen AL, Forde DR: Full and partial posttraumatic stress disorder: findings from a community survey. *Am J Psychiatry* 1997; 154: 1114-19.
7. Cook JM, Ruzek JI, Cassidy EL: PTSD and cognitive impairment in older adults: awareness and recognition of a possible association. *Psychiatr Serv* 2003; 54: 1223-5.
8. Harel Z, Noelker LS: Severe vulnerability and long-term care. In: *Matching People with Services in Long-Term Care*, pp 5-24. Edited by Dunkle R. New York, Springer, 1995.
9. Hamilton JD, Workman RH: Persistence of combat-related posttraumatic stress symptoms for 75 years. *J Trauma Stress* 1998; 11: 763-8.
10. McCartney JR, Severson K: Sexual violence, PTSD and dementia. *J Am Geriatr Soc* 1997; 45: 76-8.
11. Moyer J: PTSD in long term care. *Clin Gerontol* 1997; 18: 84-8.
12. Frueh BC, Elhai JD, Hamner MB, Magruder KM, Sauvageot JA, Mintzer J: Elderly veterans with combat-related posttraumatic stress disorder in specialty care. *J Nerv Ment Dis* 2004; 192: 75-9.
13. Mittal D, Torres R, Abashidze A, Jimerson N: Worsening of PTSD symptoms with cognitive decline: case series. *J Geriatr Psychiatry Neurol* 2001; 14: 17-20.
14. van Achterberg ME, Rohrbaugh RM, Southwick SM: Emergence of PTSD in trauma survivors with dementia. *J Clin Psychiatry* 2001; 62: 206-7.
15. U.S. Department of Health and Human Services: *The threshold of discovery: future directions for research on aging*. Washington, DC, Task force on Aging Research, 1995.
16. United Nations: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. *World Population Prospects: The 2002 Revision and World Urbanization Prospects*. Available at: <http://esa.un.org/unpp>; accessed January 1, 2004.
17. Klein R, Stockford D: *The changing veteran population: 1990-2020*. Washington DC, Office of Assistant Secretary for Policy and Planning, Department of Veterans Affairs, 2000.
18. Schnurr PP, Spiro AI, Vielhauer MJ, Findler MN, Hamblen JL: Trauma in the lives of older men: findings from the Normative Aging Study. *J Clin Geropsychol* 2002; 8: 175-87.
19. Parmelee PA, Lawton MP, Katz IR: The structure of depression among elderly institution residents: affective and somatic correlates of physical frailty. *J Gerontol A Biol Sci Med Sci* 1998; 53: M155-62.
20. Folstein MF, Folstein SE, McHugh PR: Mini-mental state: a practical method for grading the cognitive state of participants for the clinician. *J Psychiatr Res* 1975; 12: 189-98.
21. Cohen J: *Statistical Power Analysis for the Behavioral Sciences*, Ed 2. Hillside NJ, Lawrence Erlbaum Associates, 1990.
22. Weathers FW, Litz BT, Herman DS, Huska JA, Keane TM: *The PTSD checklist: reliability, validity, & diagnostic utility*. Presented at the Annual Meeting of the International Society for Traumatic Stress Studies, San Antonio TX, October 1993.
23. Keane TM, Fairbank JA, Caddell JM, Zimering RT, Taylor KL, Mora CA: Clinical evaluation of a measure to assess combat exposure. *Psychol Assess* 1989; 1: 53-5.
24. Keane TM, Caddell JM, Taylor KL: Mississippi Scale for combat-related posttraumatic stress disorder: three studies in reliability and validity. *J Consult Clin Psychol* 1988; 56: 85-90.
25. American Psychiatric Association: *Diagnostic and Statistical Manual of Mental Disorders*, Ed 4. Washington, DC, American Psychiatric Association, 1994.
26. Blanchard EB, Jones-Alexander J, Buckley TC, Forneris CA: Psychometric properties of the PTSD Checklist (PCL). *Behav Res Ther* 1996; 34: 669-73.
27. Ruggiero KJ, Del Ben K, Scotti JR, Rabalais AE: Psychometric properties of the PTSD Checklist-Civilian Version. *J Trauma Stress* 2003; 16: 495-502.
28. Schnurr PP, Ford JD, Friedman MJ, Green BL, Dain BJ, Sengupta A: Predictors and outcomes of posttraumatic stress disorder in World War II veterans exposed to mustard gas. *J Consult Clin Psychol* 2000; 68: 258-68.
29. Fricker AE, Smith DW, Davis JL, Hanson RF: Effects of context and question type on endorsement of childhood sexual abuse. *J Trauma Stress* 2003; 16: 265-8.
30. Acierio R, Brady KL, Gray M, Kilpatrick DG, Resnick HS, Best CL: Psychopathology following interpersonal violence: a comparison of risk factors in older and younger adults. *J Clin Geropsychol* 2002; 8: 13-23.
31. Keane TM, Wolfe J: Comorbidity in PTSD: an analysis of community and clinical studies. *J Appl Soc Psychol* 1990; 20: 1776-88.
32. Brewin CR, Andrews B, Valentine JD: Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *J Consult Clin Psychol* 2000; 68: 748-66.
33. Rovner BW, Kafonek S, Filipp L, Lucas MJ, Folstein MF: Prevalence of mental illness in a community nursing home. *Am J Psychiatry* 1986; 143: 1446-9.
34. Hunt T, Lindley CJ (editors): *Testing Older Adults: A Reference Guide for Geropsychological Assessments*. Austin, TX, Pro-ed, 1990.
35. Lichtenberg PA (editor): *Handbook of Assessment in Clinical Gerontology*. New York, Wiley, 1999.