Validity of Self-Report Screening Scale for Elder Abuse: Women's Health Australia Study

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**Purpose:** Early identification of elder abuse requires a valid, easily administered screening instrument. This study examined the reliability and validity of the Vulnerability to Abuse Screening Scale (VASS), a 12-item self-report measure with four factors (Vulnerability, Dependence, Dejection, and Coercion). **Design and Methods:** The sample consisted of 10,421 nationally representative Women’s Health Australia study participants, aged 73–78, who completed the Time 2 postal survey in 1999. We tested validity of the VASS factor structure and whether baseline risk status independently predicted Time 2 attrition. **Results:** Findings confirmed the VASS factor structure and construct validity. Four factors explained 51% of variance, and these factors were internally consistent. The Vulnerability and Coercion factors held the strongest face and construct validity for physical and psychological abuse. The Dependence and Dejection factors were valid and reliable and significantly predicted 3-year attrition after controlling for confounders. **Implications:** Further work is needed to determine sensitivity and specificity of VASS as a screening instrument for elder abuse. Qualitative research could examine specific experiences and contexts of vulnerable women. **Key Words:** Elder abuse, Dependence, Dejection, Psychosocial, Cohort.

Elder abuse is a multidimensional construct that encompasses the infliction on older people of physical abuse, abandonment, emotional/psychological abuse, financial/material abuse, and/or neglect (National Center on Elder Abuse [NCEA] 1998). The most common forms of elder abuse are neglect and psychological abuse, followed by physical abuse (Kurle, Sadler, Lockwood, & Cameron, 1997; Marshall, Benton, & Brazier, 2000; NCEA, 1998; Pavlik, Hyman, Festa, & Bitondo Dyer, 2001). It is estimated that approximately 3% of older Americans (Pillemer & Finklehor, 1988), 4% of older Australians (Kurle et al., 1997), and 6% of older Dutch (Comijs, Pot, Smit, Bouter, & Jonker, 1998) experience some form of abuse. In a national study of over 12,000 Australian women aged 70–75, the prevalence of vulnerability to psychological abuse was estimated to be between 1% and 6%, and coercive behavior involving physical abuse was experienced by 1%–4% (Schofield, Reynolds, Mishra, Powers, & Dobson, 2002). The inability to more precisely estimate the scope of elder abuse in the community has been related to poor construct definition and the variability of risk factors for different types of abuse (Pavlik et al., 2001).

**Characteristics Associated With Elder Abuse**

Researchers have identified a wide range of factors associated with increased risk of elder abuse (Goodrich, 1997; Lachs, Williams, O’Brien, Hurst, & Horwitz, 1997). For instance, Goodrich (1997) identified 33 risk factors that were grouped into five dimensions of client characteristics (e.g., age, gender, physical health, confusion, emotional health), abuser factors (e.g., physical or functional limitations, caregiver skills and knowledge, active alcoholism and other substance abuse, mental health problems, emotional or financial dependency, chronic fatigue), environmental factors (e.g., health violations, structural soundness of victim’s home, home location, termination of utilities in the home), and current and historical abuse factors (e.g., previous history of abuse, severity, or escalating pattern of abuse).

A 9-year longitudinal study among 2,812 community-dwelling adults found that risk factors for reported elder mistreatment included age, female...
gender, race, poverty, functional disability, and cognitive impairment (Lachs, Williams, O’Brien, Hurst, & Horowitz, 1997). As well, victims of elder mistreatment had higher rates of interaction with emergency departments and greater likelihood of admission than nonabused elders in one U.S. study (Lachs, Williams, O’Brien, Hurst, Kossack, et al., 1997), but this finding was not supported by a community-level analysis (Jogerst, Dawson, Hartz, Ely, & Schweitzer, 2000). Resolved cases of reported elder abuse were more likely than unresolved cases to be associated with neglect, increased social support for the victim, reduced stress, reduced interdependency of victim and perpetrator, and a change in victim’s living circumstances (Wolf & Pillemer, 2000).

Only recently have there been more specific investigations of psychosocial characteristics of victims of elder mistreatment. For instance, a Dutch study found that victims of physical aggression had a more passive and avoidant way of handling problems, whereas those suffering chronic verbal aggression had less control over problem situations (Comijs, Jonker, van Tilburg, & Smit, 1999). Financial mistreatment was associated with having negative beliefs about their self-efficacy and a tendency to turn aggression and frustration on themselves.

Considerable evidence suggests that abusers have common personality characteristics, such as poor mental or physical health, alcohol or other drug dependence, financial difficulty or being financially dependent on the elder, resentment toward the elder, and social isolation (Hwalek, Neale, Goodrich, & Quinn, 1996; Kurrle et al., 1997). Precaregiving experiences of abuse and violence were found to be key risk factors for abuse during caregiving (Hughes, 1997). Others have suggested that elder mistreatment is caused by the stress and pressure felt by the carer when catering to the needs of a person who may have dementia or another disability requiring continual supervision (Coyne, Reichman, & Berbig, 1993).

Demographic and community characteristics have also been implicated. Rates of substantiated elder abuse have been significantly correlated with population density, community rates of child abuse, poverty, and inner city living conditions in the United States (Jogerst et al., 2000) and with lower socioeconomic status, older population, more community training of area professionals, and higher agency service rating scores (Wolf & Li, 1999).

Elder Abuse and Health Outcomes

Increasingly, evidence is showing that elder abuse is associated with a range of adverse health outcomes. Substantiated reports of elder abuse have been linked to increased dementia and depression (Bitondo-Dyer, Pavlik, Murphy, & Hyman, 2000) as well as to shorter life span after adjusting for other factors related to increased mortality in older adults (Lachs, Williams, O’Brien, Pillemer, & Charlson, 1998). Mouton and Espino (1999) found that older women who experience abuse were likely to consult medical practitioners with conditions such as physical injuries, gynecological complaints, gastrointestinal disorders, fatigue, headache, myalgia, depression, and anxiety.

Screening for Elder Abuse

As with most forms of family violence, there are strong social, self-esteem, and shame barriers to abused elders’ reporting their abuse. Also, abuse of elderly people goes largely undetected by service providers (Kurrle et al., 1997; Rosenblatt, Cho, & Durance, 1996). Reasons for this may include the difficulty in detecting abuse, particularly psychological abuse and neglect; the lack of suitable, easily administered screening instruments; and poor awareness of the size and scope of the problem. To be effective, screening for elder abuse should occur as part of routine health care for older people rather than for patients presenting with injuries or who have been identified as needing an alternative form of care (American Medical Association [AMA], 1992; Fulmer, Paveza, Abraham, & Fairchild, 2000). Screening at the population level would add to our limited knowledge about the types and patterns, and correlates and outcomes of elder abuse. There is, therefore, a strong need for development and validation of reliable instruments to measure the types and patterns of abuse against older people as well as to assess their vulnerability for abuse.

Research in the family violence domain has highlighted the importance of measuring specific and concrete behaviors and episodes of abuse as well as general perceptions (Rosenbaum, 1988; Shepard & Campbell, 1992). However, because of the reluctance to report abuse, screening must involve more subtle and indirect questions about the older person’s home and family life, such as “What’s a typical day like?” as well as asking about obvious forms of abuse such as “Does anyone yell at you or threaten you?” (Gray-Vickrey, 2000, p. 35). Many screening instruments to date have been criticized as being too broad and failing to identify the specific forms of abuse that are most prevalent in different contexts (Frost & Willette, 1994).

A range of screening instruments have been developed over the past 20 years, including the Comprehensive Geriatric Assessment (Dyer & Goins, 2000), the AMA Assessment Protocols for Physicians (AMA, 1992), Adult Protective Services Protocols (Goodrich, 1997), Risk Factor Checklist (Canadian Task Force on the Periodic Health Examination, 1994), the Mount Sinai/Victim Services Agency Elder Abuse Project Questionnaire...
(Mount Sinai/Victim Services Agency Elder Abuse Project, 1988), the Elder Assessment Instrument (Fulmer & Cahill, 1984; Fulmer et al., 2000), the Indicators of Abuse Screen (Reis & Nahmiash, 1998), and the screening for family violence guidelines (U.S. Preventive Services Taskforce, 1989).

Most screening instruments are interviewer administered rather than self-report (Marshall et al., 2000) and are designed to evaluate quality of care-giving (e.g., Bravo, Girouard, Gosselin, Archambault, & Dubois, 1995), to identify abusive caregivers of older people (Reis & Nahmiash, 1995), and to help health professionals to detect problems (Reis & Nahmiash, 1998). However, a review of 143 taped interviews between victims of elder abuse and interviewers found that key questions were missed by interviewers, even though a corresponding answer was recorded (Comijs, Dijkstra, Bouter, & Smit, 2000), suggesting that the clinical interview is not a perfect measurement tool. Furthermore, the abused person may find it more shameful to acknowledge abuse in a face-to-face interview with a high-status professional than in a less exposed context such as self-report survey format. Thus, there is a need for a more indirect and easy-to-use methodology for detecting risk of abuse in order to enhance detection and facilitate early intervention.

A number of self-report familial abuse screening measures have been reported in the literature. For instance, the Conflict Tactics Scale (CTS), which has been widely used in community surveys, measures most forms of family violence (Straus, 1979). However, it fails to adequately measure psychological abuse. The Abusive Behavior Inventory broadened the items to include a range of psychologically and physically abusive behaviors (Shepard & Campbell, 1992). The Hwalek–Sengstock Elder Abuse Screening Test (H-S/EAST), one of the early brief self-report screening instruments designed specifically to assess an individual’s risk of elder abuse (Hwalek & Sengstock, 1986; Neale, Hwalek, Scott, Sengstock, & Stahl, 1991), has 15 items measuring three dimensions: violations of personal rights or direct abuse, characteristics of vulnerability, and potentially abusive situations.

Adequate construct validity of the H-S/EAST was reported for small clinical populations in North America (Neale et al., 1991). However, further validation in at least two studies has failed to replicate this construct validity. A U.S. factor-analytic study of the H-S/EAST, with a sample of African American, Hispanic, and White elders living in public housing, supported a three-factor structure but with a reduced number of items (Moody, Voss, & Lengacher, 2000). Another study was undertaken on a nationally representative sample of over 12,000 Australian women aged 70–75 years as part of the baseline Women’s Health Australia survey (Schofield et al., 2002). This resulted in a 12-item scale, now referred to as the Vulnerability to Abuse Screening Scale (VASS). It consists of four factors, each including three items, representing the following domains: vulnerability, dependence, dejection, and coercion.

Study Aims

Given the rapidly aging population, increasing knowledge of the prevalence and risk factors for elder abuse, and evidence of adverse health outcomes of abuse, it is important to investigate methods of screening for abuse at the population level to facilitate early detection and intervention. This study extends earlier validation work on the VASS by examining the stability, reliability, and internal consistency of the factor structure of the VASS over a 3-year follow-up period on the same cohort of women.

We also examine its construct validity by comparing VASS factor scores at the 3-year follow-up with other measures hypothesized to be related, as well as factors hypothesized to be unrelated. For instance, we hypothesized that the Vulnerability factor would be most strongly related to measures of conflict and stress in families and the Coercion factor to abusive episodes and life events over the past 12 months. We also hypothesized that the Dejection factor would be linked with measures of depression and poor mental health and the Dependence factor with poorer health, greater health service use, and need for help. Finally, we hypothesized that women with higher VASS risk status at baseline would be more likely to be lost to the 3-year follow-up, after controlling for baseline self-rated health, age, marital status, education, area of residence, and ethnicity. Confirmation of this hypothesis would provide some further evidence of the predictive validity of the scale as a measure of the vulnerability construct and yield information about which factors best predicted attrition after controlling for health and demographics.

Methods

The Australian Longitudinal Study on Women’s Health, now known as Women’s Health Australia (WHA), is a longitudinal study of factors affecting the health and well-being of three national cohorts of women who were aged 18–23 years (young), 45–50 years (mid-age), or 70–75 years (older) at baseline in 1996 (Brown et al., 1996). This study, designed to track the health of women over at least 20 years, provides longitudinal data on health, health service use, sociodemographics, and personal information from an initial sample of 41,500 women. Since the Time 1 (T1) survey, the three age cohorts have been surveyed annually on a rolling basis.
Study Sample

The original WHA sample was selected randomly from the national Medicare Health Insurance database (which includes all residents of Australia regardless of age, including immigrants and refugees), with intentional overrepresentations of women from rural and remote areas. Further details of recruitment methods have been described elsewhere (Brown et al., 1998).

At T1, in 1996, a total of 12,939 older women responded to the mailed survey. The second survey (at Time 2 [T2]) was conducted in 1999. There were two versions of the T2 survey: a long mailed survey (n = 9,501) and a short telephone interview version for women unable or unwilling to complete the long version (n = 920). Response rate for T2 was 91% of those who, at T1, had consented to further contact and had not subsequently died. Hence, the sample for the present study consisted of 10,421 women who responded at T1 (aged 70–75) and T2 (aged 73–78).

Measures

The T1 survey consisted of a 270-item self-report questionnaire. The T2 survey consisted of 324 items. The following measures were collected at both T1 and T2, unless otherwise specified.

Elder Abuse.—The major study variable was the VASS, a 12-item self-report measure designed to assess the risk of elder abuse (Schofield et al., 2002). The VASS contains 10 of the H-S/EAST items (Neale et al., 1991) and 2 additional items: “Has anyone close to you called you names or put you down or made you feel bad recently?” (Conflict Tactics Scale; Straus, 1979) and “Are you afraid of anyone in your family?” (McFarlane, Parker, Soeken, & Bullock, 1992). Response options were yes or no. At T1, the VASS was composed of four factors, with three items each, representing the following domains: vulnerability, dependence, dejection, and coercion. The Vulnerability and Coercion factors had the highest face validity for abuse and demonstrated moderate to good construct validity. The Dejection factor more resembled a general measure of depression, whereas dependence may serve as an indirect measure of vulnerability to abuse, given past research showing that elder abuse is related to increasing frailty and dependence (Kurrle et al., 1997; NCEA, 1998).

Stress.—Women were asked how stressed they had felt over the past 12 months about various aspects of their lives (own health, health of family members, living arrangements, money, relationship with partner/spouse, relationship with children, relationship with other family members, and anything else), and a mean stress score was calculated for each respondent. Because living/care arrangement changes in living circumstances that allowed in-vestigation of the discriminant validity of specific VASS factors in relation to these domains.

Life Events.—A 26-item life events measure, modified from Norbeck (1984), was included to examine whether vulnerability to abuse increased with more life events. At T2, women identified whether they had experienced each of the 26 life events in the past 12 months; their responses were summed to give a total life events score. The life events items included items on violent events, relationship difficulties, health problems, and changes in living circumstances that allowed in-

Dependence.—Because dependence and frailty have been associated with increased risk of abuse (Kurrle et al., 1997), we included a number of items to measure perceived dependence at T2. These included “I can usually depend on others” and “Most conflicts between people can be resolved by discussion” from the Inventory of Psychosocial Balance (Domino & Affonso, 1990), with responses on a 4-point Likert scale ranging from never to often; “I am in control of my health” from the Health Related Hardiness Scale (Pollock & Duffy, 1990), with responses on a 6-point Likert scale ranging from strongly disagree to strongly agree; and “I rarely count on good things happening to me” from the Revised Life Orientation Test (Scheier, Carver, & Bridges, 1994), scored on a 5-point scale ranging from strongly disagree to strongly agree. It was not possible to include whole scales for these dimensions due to space constraints and the need to avoid excessive respondent burden. Participants were also asked if they needed regular help with daily tasks because of long-term illness, disability, or frailty.

Health.—The major indicator of health outcomes, the Medical Outcomes Study Health Survey—Short Form (SF-36), is a widely used and validated measure of health-related quality of life (Ware, Kosinski, & Keller, 1994). The physical and mental health component summary scores (PCS and MCS) calculated from the SF-36 were standardized using the cohort means for WHA (Mishra & Schofield, 1998). The self-rating-of-health item was also used as a separate variable.

Acute and Chronic Illnesses.—Acute symptoms were assessed by asking participants if, in the past 12
months, they had had any of 22 symptoms such as allergies/hay fever/sinusitis, stiff or painful joints, or difficulty sleeping. Responses of sometimes or often were summed to give a total score for current symptoms. The survey asked participants if a doctor had ever told them that they had any of 17 chronic health problems, such as diabetes or asthma. Affirmative responses were summed to give a score for number of chronic conditions. Women were asked at T2 if they had been told by a doctor in the past 3 years that they had depression, an anxiety/nervous disorder, or Alzheimer’s disease or dementia.

Use of Health Services.—Participants were asked how many times they had consulted a family doctor or various other medical or alternative health practitioners for their own health in the past 12 months. They were also asked if they had been admitted to the hospital in the past 12 months, whether they had had any of 10 common surgical procedures (such as eye surgery, hysterectomy, heart surgery), and whether they had private hospital insurance.

Medication Use.—Medication use in the past 4 weeks was assessed at T2 by questions about medications for specific conditions such as depression, anxiety/nerves, sleeping difficulties, and chronic illnesses.

Body Mass Index.—Self-reported weight and height were used to estimate body mass index, calculated by weight in kilograms divided by the square of height in meters.

Demographics.—The demographic items included main occupation, highest level of education, country of birth (T1), language spoken at home (T1), area of residence (ranging from state capital city to remote area), and marital status (classified as married or de facto, widowed in the past 3 years, widowed for more than 3 years, separated or divorced, and single). Attrition was categorized as 0 (responded to both surveys) and 1 (responded to T1 survey only).

Statistical Analysis

Exploratory factor analysis using the method of principal components and varimax rotation was performed on the 12 VASS items from T2, restricting the solution to four factors, to test the stability of the factor structure identified at T1. Cronbach’s alphas were calculated to determine internal consistency of factors. Pearson correlation coefficients were used to determine the association between VASS scores and other variables plausibly related to each of the factors.

Given the sample attrition of 2,518 women between T1 and T2, chi-square and F-test comparisons of T1 data for the attrition and continuing group were made on several demographic variables (age, marital status, highest qualification, area of residence, country of birth), self-rated health, and VASS scores. To determine the predictive validity of the VASS, a multiple logistic regression was performed with attrition as the binary dependent variable. To determine whether T1 VASS scores were independent predictors of attrition, they were entered as independent variables, along with T1 self-rated health and various demographic variables. All analyses were performed using SAS (SAS Institute Inc., 1989).

Results

The study sample consisted of 10,421 women who completed both T1 and T2 surveys. Attrition from T1 to T2 (N = 2,518) included 529 women who had died and 1,989 women who were lost to follow-up due primarily to ill health, as well as no contact and a small number of withdrawals. In univariate analyses, the attrition group differed from the continuing group on a number of baseline variables including demographic, VASS score, and health-related variables (p < .0001). They were more likely to be single, widowed, separated, or divorced; to have lower education; to live in urban areas; and to come from non-English-speaking backgrounds. They scored at higher risk on the Dependence and Dejection subscales of the VASS. They had poorer self-ratings of health at baseline, and poorer mental and physical health.

Table 1 shows the T2 VASS factor loadings, factor score coefficients, communality for items in each of the four factors, and Cronbach’s alphas for each of the factors.

The factor loadings at T2 strongly confirmed the original factor structure reported from the T1 survey (Schofield et al., 2002), although there was a change in the relative strength of factors. The Vulnerability factor moved from its position as the factor that explained the most variance (19%) at T1 to third place at T2, explaining an additional 9% of the variance, and the Dependence factor strengthened its position, accounting for 18% of the variance at T2 compared with only 13% at T1. The Cronbach’s alphas ranged from .74 for Dependence to .31 for Coercion, indicating moderate to good internal reliability appropriate for a brief screening instrument (Streiner & Norman, 1995). The total amount of variance explained by the four factors at T2 was 51% compared with 50% at T1 (Schofield et al., 2002). The communalities ranged from .77 to .25, indicating that items shared a reasonable amount of variance with all the other items. The overall sampling adequacy for the analysis of the four scales was satisfactory.
was reasonable, with Kaiser’s measure of sampling adequacy equaling .68.

Construct validity was assessed first by examining correlations between the factor scores and the psychosocial variables hypothesized to be associated with abuse. Table 2 presents the statistically significant correlations, with most being in the hypothesized direction. For instance, vulnerability was primarily associated with measures of stress, particularly stress about close relationships, and negatively associated with social support, whereas coercion was negatively associated with being able to depend on others and believing conflict would be resolved by discussion and positively associated with the number of life events.

Dejection was strongly related to stress about living relationships and conflict with children, low social support, total number of life events, rarely being able to count on good things happening, not being able to depend on others, and feeling less in control of health. The most notable exceptions to the hypothesized relationships involved the Dependence factor. For instance, those with higher dependence scores reported being less stressed, having fewer recent life events, needing less help with daily tasks, and not usually being able to depend on others, against our prediction. More in line with our hypothesized relationships, dependence was just significantly related to lower social support.

An examination of relationships between VASS factor scores and a range of health-related variables yielded further support for the construct validity of the Dejection factor in particular. In line with prediction, dejection was strongly associated with a range of mental health variables including poorer MCS; having been diagnosed with depression, anxiety, or Alzheimer’s disease in the past 3 years; currently taking medication for depression or anxiety/nerves; and a range of physical health and health service utilization measures. The Dependence factor was associated with having been diagnosed with Alzheimer’s disease/dementia. Against our prediction, those who were more dependent reported having better physical health (higher PCS, fewer chronic and acute conditions) and lower health service utilization measures. The Dependence factor was associated with being able to depend on others and believing conflict would be resolved by discussion and positively associated with the number of life events.

Table 3 summarizes the statistically significant correlations between each of the life events and VASS scores. The results provide evidence of the content validity of these factors. As predicted, life events involving violence were related most consistently to the Coercion factor. Adverse relationship events such
as major conflict with children, break up of a close personal relationship, being assaulted, and having legal troubles were all related to the vulnerability factor and death of spouse or partner and negatively correlated with moving into institutional care, as predicted. The Dejection factor, hypothesized to be linked with depression, was associated with most of the life events, particularly death of spouse/partner, decline in health of family member, and changes in living conditions, whereas the Dependence factor was associated with moving into institutional care, decline in health of family member, and decreased income. Variables not associated with any of the factors are not included in the table.

A multiple logistic regression analysis was conducted to determine whether VASS factors predicted attrition from the study after controlling for a range of potential confounders. The results shown in Table 4 indicate that the attrition group differed from the continuing group on two of the four VASS factors, Dependence and Dejection, after controlling for other confounders such as age, education, country of birth, marital status, and self-rated health.

**Discussion**

The findings of this 3-year follow-up of older women in the WHA study show strong support for the stability of the four VASS factors, despite considerable attrition among women who were more dependent and dejected at baseline. The factor structure showed a strengthening of the Dependence factor at follow-up and a higher prevalence of women who reported being dependent, consistent with the general trend toward greater dependence with increasing age. The factors continued to show moderately good reliability and good internal consistency, with the Coercion factor performing less well than the other three. Given only three items per factor, this scale shows adequate performance on the validity tests reported. However, further work is needed, involving more qualitative investigation to determine the nature and extent of abusive experiences and to further assess the predictive validity of the screening measure.

One limitation of the study is the lack of a gold standard measure of elder abuse against which to test the sensitivity and specificity of the VASS. However, where experiences of familial abuse are concerned it is widely acknowledged that perceptions of abuse constitute abuse (Shepard & Campbell, 1992). Furthermore, many of the individual items making up the four VASS factors meet the desirable criteria of being concrete and specific behaviors rather than generalized perceptions, thus increasing their validity.

### Table 2. Construct Validity: Correlations Between Factor Scores and Other Variables Hypothesized To Be Associated or Not With Vulnerability to Abuse Screening Scale Factors for Women Aged 73–78 at Time 2

<table>
<thead>
<tr>
<th>Psychosocial Variable</th>
<th>Dependence</th>
<th>Dejection</th>
<th>Vulnerability</th>
<th>Coercion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall stress</td>
<td>-.04</td>
<td>.37</td>
<td>.14</td>
<td></td>
</tr>
<tr>
<td>Stress about living arrangements</td>
<td>.31</td>
<td>.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress about relationship with children</td>
<td>.22</td>
<td>.16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress about relationship with partner/spouse</td>
<td>.05</td>
<td>.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress in relationship—other family members</td>
<td>.15</td>
<td>.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life events summary score</td>
<td>-.06</td>
<td>.19</td>
<td>.04</td>
<td>.04</td>
</tr>
<tr>
<td>Can rarely count on good things happening</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social support (DSSI)</td>
<td>-.06</td>
<td>-.38</td>
<td>-.07</td>
<td></td>
</tr>
<tr>
<td>Need help with daily tasks</td>
<td>-.04</td>
<td>-.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can usually depend on others</td>
<td>-.07</td>
<td>-.14</td>
<td>-.03</td>
<td></td>
</tr>
<tr>
<td>Believe most conflicts can be resolved by discussion</td>
<td></td>
<td>-.09</td>
<td>-.04</td>
<td></td>
</tr>
<tr>
<td>Feel in control of health</td>
<td></td>
<td></td>
<td>-.13</td>
<td></td>
</tr>
</tbody>
</table>

**Health Variables**

**Mental health:** MCS
- Diagnosed with depression in past 3 years: .26
- Diagnosed with anxiety/nervous disorder: .19
- Diagnosed with Alzheimer’s/dementia: .03
- Medication for depression: .15
- Medication for anxiety/nerves: .12

**Physical health:** PCS
- No. acute symptoms | -.08 | .25 | .04 |
- No. chronic conditions | -.07 | .20 | |
- No. general practitioner visits | -.05 | .16 | |
- Admission to hospital | | .08 | |
- No. surgical procedures | -.05 | .04 | |
- Height* | | | |
- Body mass index | | | |

Notes: Only statistically significant results with $p < .001$ are shown. DSSI = Duke Social Support Index.

*Hypothesized to be unrelated.
Construct validity of the four factors, determined by correlations with hypothesized variables, was well supported. The Dejection factor was correlated with all variables in the predicted direction. The other three factors demonstrated greater discrimination, and most significant relationships were in the predicted direction, whereas the two variables predicted to be unrelated to any of the four factors (height and body mass index), supported this prediction.

Vulnerability, which measures physical and psychological abuse, showed moderately strong correlations with stress, particularly stress about relationships with partner/spouse, children, and other family members, as well as with life events that measured direct abuse, such as major conflict with children; being pushed, grabbed, shoved, kicked, or hit; and being forced to take part in unwanted sexual activity. It showed negative correlations with social support, satisfaction with relationships with family and friends, mental health, and death of spouse or partner. Thus, the VASS may in part be measuring intimate partner violence as well as more commonly defined forms of elder abuse. A qualitative investigation of the experiences of women in relationships would be a valuable addition to the field.

The Coercion factor demonstrated theoretically consistent, though modest, positive correlations with the number of life events and stress and negative correlations with being able to depend on others and believing that most conflicts could be resolved by discussion. This accords with prior research findings suggesting that older people’s ways of coping with problems is linked to risk of abuse (Comijs et al., 1999). Further evidence of the validity of the Coercion factor can be seen in the fact that it was positively correlated with the most coercive life event items such as “major conflict with children,” “being robbed,” “damage to personal property,” “being pushed, grabbed, shoved, kicked or hit,” and “being forced to take part in unwanted sexual activity.” It was negatively correlated with the death of spouse or partner, further suggesting that partner abuse may have been partly responsible for the VASS score. Alternatively, women whose partners have recently died are likely to receive increased support from family members for a time, thus reducing the likelihood of coercive forms of elder abuse.

Overall, the Coercion factor was moderately successful in terms of construct and predictive validity; however, the modest correlations perhaps indicate that the wording of items is not specific enough. For instance, the wording of “Has anyone forced you to do things you didn’t want to do?” lacks specificity and could have a range of possible interpretations. Similarly, “Does someone in your family make you stay in bed or tell you you’re sick when you know you’re not?” has a very low incidence and may not be sufficiently representative of common forms of elder abuse. Future work on screening should investigate alternative items to tap this Coercion factor. A useful starting point for further developing this subscale may be the life events related to this factor: major conflict with children; being robbed; being pushed, grabbed,
shoved, kicked, or hit; being forced to take part in unwanted sexual activity; and having legal troubles.

Another shortcoming of the existing scale is inadequate sampling of items directly measuring the neglect dimension of abuse, the most prevalent form of elder abuse (NCEA, 1998). The Dejection factor is conceptually most closely linked to the neglect dimension of elder mistreatment. However, only one item in the Dejection factor appears to measure neglect: “Do you feel that nobody wants you around?” It may be beneficial to develop more items for a factor that taps more clearly into the neglect dimension. Furthermore, there need to be items that differentiate self-neglect from neglect by carers, two dimensions that past research have shown to be important aspects of elder mistreatment (NCEA, 1998).

As past research has indicated, various client and carer factors have been associated with increased risk of elder abuse (Hughes, 1997). Thus, it is important that screening measures attempt to measure these characteristics as well as more direct forms of abuse. For this reason, we would argue that the Dependence and Dejection subscales should be included at this stage until further work can better determine their longer term predictive validity. Interestingly, against our prediction, the Dependence factor was correlated with better physical health (PCS), lower health service use, chronic and acute conditions and surgical procedures, lower stress, life events, social support, and satisfaction with relationships. Dependence was also negatively associated with needing help and being able to depend on others. Perhaps dependence is protective against poorer health because dependent older people are more likely to be cared for.

The high attrition rate between surveys raised the possibility that the validity tests on the VASS at T2 may be influenced by a disproportionate loss of those who were most vulnerable or differed on other significant variables at baseline. Thus, we examined how baseline variables predicted attrition and specifically whether VASS scores independently predicted attrition. Multiple logistic regression

<table>
<thead>
<tr>
<th>Variable</th>
<th>Attrition Group (n = 2,518)</th>
<th>Continuing Sample (n = 10,421)</th>
<th>Odds Ratio 95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elder abuse scores</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vulnerability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vulnerability mdn</td>
<td>0.0</td>
<td>0.0</td>
<td>1.12 (0.84–1.48)</td>
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<tr>
<td>Vulnerability m</td>
<td>0.01</td>
<td>0.01</td>
<td></td>
</tr>
<tr>
<td>Vulnerability SD</td>
<td>0.19</td>
<td>0.15</td>
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<tr>
<td>Dependence</td>
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<td></td>
</tr>
<tr>
<td>Dependence mdn</td>
<td>0.0</td>
<td>0.0</td>
<td>1.35 (1.13–1.60)</td>
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<tr>
<td>Dependence m</td>
<td>0.11</td>
<td>0.09</td>
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</tr>
<tr>
<td>Dependence SD</td>
<td>0.28</td>
<td>0.26</td>
<td></td>
</tr>
<tr>
<td>Dejection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dejection mdn</td>
<td>0.0</td>
<td>0.0</td>
<td>1.30 (1.10–1.52)</td>
</tr>
<tr>
<td>Dejection m</td>
<td>0.17</td>
<td>0.12</td>
<td></td>
</tr>
<tr>
<td>Dejection SD</td>
<td>0.33</td>
<td>0.27</td>
<td></td>
</tr>
<tr>
<td>Coercion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coercion mdn</td>
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<td>0.0</td>
<td>1.28 (0.93–1.74)</td>
</tr>
<tr>
<td>Coercion m</td>
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<td>0.01</td>
<td></td>
</tr>
<tr>
<td>Coercion SD</td>
<td>0.16</td>
<td>0.13</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age mdn</td>
<td>73.0</td>
<td>72.0</td>
<td>1.05 (1.02–1.08)</td>
</tr>
<tr>
<td>Age m</td>
<td>72.7</td>
<td>72.6</td>
<td></td>
</tr>
<tr>
<td>Age SD</td>
<td>1.5</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Highest qualifications (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤13 years</td>
<td>89.2</td>
<td>84.5</td>
<td>1.00</td>
</tr>
<tr>
<td>Trade/apprentices</td>
<td>89.2</td>
<td>84.5</td>
<td></td>
</tr>
<tr>
<td>Certificate/Diploma</td>
<td>5.0</td>
<td>8.1</td>
<td>0.90 (0.69–1.16)</td>
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<tr>
<td>University degree</td>
<td>2.6</td>
<td>3.9</td>
<td>0.64 (0.51–0.78)</td>
</tr>
<tr>
<td>Country of birth (%)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>71.5</td>
<td>78.6</td>
<td>0.72 (0.65–0.80)</td>
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<tr>
<td>Overseas</td>
<td>28.5</td>
<td>21.4</td>
<td></td>
</tr>
<tr>
<td>Self-rated health (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excellent</td>
<td>5.5</td>
<td>6.5</td>
<td>1.00</td>
</tr>
<tr>
<td>Very good</td>
<td>18.3</td>
<td>28.1</td>
<td>0.79 (0.63–1.01)</td>
</tr>
<tr>
<td>Good</td>
<td>34.1</td>
<td>40.5</td>
<td>1.04 (0.84–1.30)</td>
</tr>
<tr>
<td>Fair</td>
<td>32.1</td>
<td>22.1</td>
<td>1.67 (1.34–2.11)</td>
</tr>
<tr>
<td>Poor</td>
<td>10.0</td>
<td>2.8</td>
<td>3.77 (2.84–5.02)</td>
</tr>
</tbody>
</table>
analysis found that neither of the two factors that appear to most directly measure abuse were significantly predictive of attrition over the 3-year period, after controlling for significant variables such as age, education, ethnicity, and self-rated health. Thus, it does not appear that physical and verbal abuse independently predict attrition in the study. However, both the Dependence and Dejection factors were significant independent predictors. It is not clear whether this effect can be linked to abuse as such. It may simply mean that those who are more dependent or more depressed are more likely to die or drop out of the study. However, it is interesting to note that these two factors independently predict attrition after accounting for self-rated health and demographics. Further work is needed to determine reasons for attrition such as death, illness, admissability to institutional care, and having moved.

In summary, our study provides support for the validity of the factor structure of the VASS and the construct validity of factors. Predictive validity is more difficult to determine and further work is needed, now that the scale’s stability has been confirmed. The WHA study provides the potential to follow this cohort over another 3 years and further examine predictive validity for mortality, health status, and health service utilization. More in-depth investigation of a subsample of high-risk women would extend our understanding of circumstances and factors contributing to elder abuse risk status and its impact on health.

References


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**University of Kentucky Ph.D. Program in Gerontology, Sanders-Brown Center on Aging**

The Ph.D. Program in Gerontology is seeking to fill two tenure-track faculty positions, at the assistant or associate level, in biomedical and biobehavioral gerontology. Candidates are sought within, or with some combination of, the following areas: (1) *Biology of Aging* (with particular emphasis on evolutionary systems or a biological systems approach); (2) *Biobehavioral Health and Aging* (a focus on genetics would be desirable); (3) *Clinical Gerontology Research* (a research focus in domains such as neuropsychology, clinical pharmacology, physical therapy, or other health-related areas would be appropriate). A strong quantitative orientation and ability to contribute to the quantitative methodology and training options within the Ph.D. Program in Gerontology would be an advantage.

The two appointments will complement a core faculty with a strong orientation to interdisciplinary research and doctoral instruction. Successful candidates are expected to develop and maintain innovative, externally funded research programs, contribute to the development of doctoral students through teaching and mentoring, and participate in the service missions of the University of Kentucky.

The Ph.D. Program in Gerontology (identified as a Target of Opportunity and supported in part by the Research Challenge Trust Fund) currently supports 36 resident doctoral students, and works closely with the Sanders-Brown Center on Aging (a Commonwealth Center of Excellence and Alzheimer’s Disease Research Center). The Program also maintains close affiliations with numerous university departments and research units by virtue of its interdisciplinary focus.

Applicants must have a Ph.D. or equivalent degree at the time of appointment. Preference will be given to individuals with postdoctoral experience. Interested individuals should send a curriculum vita, a summary of past experience and future research plans, and the names and contact information of three referees to: Dr. Graham D. Rowles, Faculty Search Committee, Sanders-Brown Center on Aging, University of Kentucky, Lexington, KY 40536-0230; telephone (859) 257-1450 Ext. 80145; FAX (859) 323-2866.

The anticipated start date is August 15, 2003. The search committee will begin reviewing applications on February 15, 2003 and will continue until the positions are filled. Women and minority candidates are encouraged to apply. The University of Kentucky is an Affirmative Action/Equal Opportunity Employer.