BRIEF REPORT

Assessing Squalor in Hoarding: The Home Environment Index

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Abstract The current study examined a new measure of squalor associated with hoarding, the Home Environment Index (HEI). Participants ($N = 793$) were recruited from a large database of individuals who sought information about hoarding following national media appearances and consented to an internet study. Participants completed measures of hoarding and related psychopathology, including the HEI. The HEI showed good internal consistency and construct validity and reflected a single factor of home squalor (15 items). The HEI correlated positively with measures of hoarding and mood psychopathology. Recommendations for future modifications and further study are provided.

Keywords Hoarding · Self-neglect · Squalor · Poor housekeeping

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Introduction

Excessive saving behaviors have been described in the scientific literature for over a century but were studied only recently in the context of hoarding (Tolin et al. 2010). Hoarding is defined by difficulty discarding ordinary possessions and significant clutter in living space that results in distress and/or impairment (Mataix-Cols et al. 2013). Hoarding behavior has been described in various psychiatric conditions, including obsessive–compulsive disorder, schizophrenia, organic mental disorders, depression, and anorexia nervosa (see Steketee and Frost 2003). In severe hoarding cases, clutter interferes with daily tasks such as cleaning, cooking, and sleeping (Frost et al. 2004). Researchers have documented risks of poor sanitation, fire hazard, and risk of falling in severely cluttered homes, with some such cases characterized as having "squalid," or unsanitary living conditions (Frost et al. 2000). However, "squalid" conditions remain poorly defined, and little is known about this aspect of hoarding.

Squalor has been variously described as "senile breakdown syndrome," (MacMillan and Shaw 1966), "senile squalor syndrome," (Shah 1992) and "self-neglect" (Abrams et al. 2002; Adams and Johnson 1998; Lauder 1998), terms that reference individuals living in unsanitary conditions and/or lacking personal hygiene. Snowdon and Halliday (2011) described cases of severe domestic squalor in which cleaning the person's domestic environment was deemed necessary to improve health, safety and quality of life. Reasons for referral of such cases have generally stemmed from unsanitary homes and/or poor personal hygiene among older adults aged 60–90 who often suffer from physical ailments and cognitive impairments, tend to live alone and have never married (Abrams et al. 2002; Adams and Johnson 1998; Clark et al. 1975; MacMillan

and Shaw 1966; Shah 1992; Snowdon 1987; Snowdon and Halliday 2011). While the prevalence of squalor remains unknown, at least one study conducted in the United Kingdom (Macmillan and Shaw 1966) estimated that the incidence of annual squalor cases was .5 per 1,000 in those age 60 or older. Snowdon and Halliday (2011) found that the referral rate of elderly persons living in moderate to severe squalor in the Sydney, Australia area was .66 per 1,000. More recently the term, "severe domestic squalor" has been proposed to encompass all squalor cases and more accurately reflect that not all cases of "self-neglect" are also accompanied by unsanitary living conditions (Snowdon et al. 2007).

Severe domestic squalor appears to have multiple etiologies, deriving from physical disabilities (e.g., congestive heart failure, renal failure), organic pathways (e.g., dementia, prefrontal cortical damage), psychiatric conditions (e.g., chronic schizophrenia, alcoholism, and bipolar disorders), and personality disorders (Abrams et al. 2002; Clark et al. 1975; Gannon and O'Boyle 1992; Halliday et al. 2000; Macmillan and Shaw 1966; Snowdon and Halliday 2011). Obsessive compulsive disorder (OCD) has also been identified as a potential etiological pathway to squalor (Frost et al. 2000; Kim et al. 2001; Snowdon et al. 2007), and especially to hoarding behaviors that lead to cluttered conditions (Snowdon 1987; Halliday et al. 2000). In combination with recent research findings, the proposed guidelines for identifying severe domestic squalor point to a need to further differentiate squalor cases with regard to comorbid presenting problems (Snowdon and Halliday 2011) in order to advance psychopathology and intervention research. In particular, an investigation of squalor in individuals with primary hoarding has yet to be conducted.

Until recently, no standardized measures of squalor were available. Newer assessments of squalor, including the Living Conditions Rating Scale (LCRS; Halliday and Snowdon 2009) and the Environmental Cleanliness and Clutter Scale (ECCS; Halliday and Snowdon 2009) were developed from early scoring systems that focused on environmental cleanliness and personal hygiene (Macmillan and Shaw 1966; Snowdon 1987). The LCRS is a 20-item measure with three subscales that examine squalor, interior and exterior conditions of the home, and personal hygiene (Halliday and Snowdon 2009). The ECCS is a 10-item scale that focuses solely on measuring domestic environmental conditions. In limited psychometric testing of the LCRS and ECCS in 55 dwellings of individuals referred by an old age psychiatry clinic, internal consistency was reported only for the ECCS, and discriminant validity was not reported for either measure (Halliday and Snowdon 2009). The inclusion of hoarding-related items in both scales confounds the separate assessment of squalid conditions, as high scores on the two hoarding items leaves open the possibility that only mild scores on squalor items would produce overall scores in the moderate squalor range based on recommended cutoff scores (Halliday and Snowdon 2009). Accordingly, severe hoarders would likely be classified as living in squalid conditions, although evidence suggests that many people with severe hoarding do not live in squalor (Frost et al. 2000).

Accordingly, a comprehensive measure of squalor independent of the assessment of hoarding will be useful in understanding squalid conditions among those who hoard and informing future research and treatment options. The present study examined the psychometric properties of a new instrument, the Home Environment Index Scale, to assess squalid conditions among a large sample of people with a range of hoarding severity. For this assessment, we defined squalid conditions as including problems with both domestic and personal hygiene and their impact on daily activities.

Method

Procedures

The study received approval from the Institutional Review Boards at Hartford Hospital, Smith College, and Boston University. Participants indicated consent to the web-based survey by reading an informed consent page and clicking an icon on the page; they could enter a raffle to receive one of 10 copies of a self-help book on compulsive hoarding. Participants could skip any questions they wished. Survey data were stored on a confidential password protected computer. Participants completed the Home Environment Index (HEI) and other self-report questionnaires themselves as part of the larger internet study battery. There were no known conflicts of interest for the authors of this study. All authors certify responsibility for the manuscript.

Participants

The sample was recruited from a database of over 8,000 individuals who had sought information over the past 3 years from the hoarding research projects at the Institute of Living at Hartford Hospital, Smith College and Boston University, after a series of national media appearances. Invitation to potential participants occurred through e-mail, and those solicited were allowed to forward the e-mail to others with similar concerns. Prior to analysis, the data were checked for duplicate surveys which were removed from the database. Usable data were obtained from 793 people representing a convenience sample of people who self-identified as having hoarding problems and completed all measures relevant to this study. The present sample was predominantly female (93.9 %) and Caucasian (92.2 %). Their average age was

49.0 years (SD = 10.6; range = 17–83), and a small subset of 46 people (5.8 %) were 65 and older. With regard to marital status, 45.0 % were married, 24.5 % were single, 19.9 % were separated or divorced, 5.7 % were living with a partner, and 3.5 % were widowed. The sample mean score on the Hoarding Rating Scale-Self Report (see below) was 28.30 (SD = 7.87), indicating moderate hoarding symptoms comparable to those of a clinical sample with hoarding symptoms (M = 23.76, SD = 4.53) (Tolin et al. 2010). Although HRS-SR scores in this sample ranged widely (from 0 to 40), only 4 % (N = 32) fell below the clinical threshold score of 14 on this measure.

Measures

Home Environment Index (HEI)

Items for this questionnaire to measure symptoms of squalor in hoarding were developed based on clinical observations in the homes of people with serious hoarding that impaired health and safety, and literature on hoarding behavior and squalor, including existing measures of squalor and related problems. The original 26-items included questions about cleanliness in the home (e.g., rotten food, dirty linens, containers and surfaces, insects, human/animal waste or dead animals), daily activities (e.g., frequency of changing sheets, cleaning, doing laundry) and personal hygiene (e.g., body odor, showering or bathing, changing clothes). Items were rated from 0 = no presence of squalor to 3 = severe symptoms, with specific descriptors for each scale point. The daily behaviors section used a similar scale from 0 = never performed to 3 = near daily performance; these items were reverse scored for analyses.

Hoarding Rating Scale-Self Report (HRS-SR)

Severity of compulsive hoarding symptoms was determined using the self-report version of the Hoarding Rating Scale—Interview (Tolin et al. 2010). The HRS-SR consists of 5 items on a Likert scale that range from 0 (none) to 8 (extreme); items inquire about clutter, difficulty discarding, acquisition, distress, and impairment. The HRS-SR has been shown to have good internal consistency and inter-rater reliability, strong correlations with other measures of hoarding, and the ability to discriminate hoarding from non-hoarding participants (Tolin et al. 2010). A total HRS-SR score was calculated by summing the five items. The self-report version correlated strongly with the interview measure ($r = .92$, $p < .001$; Tolin et al. 2010). Internal consistency was .84 in this sample.

Obsessive–Compulsive Inventory-Revised (OCI-R)

The OCI-R (Foa et al. 2002) is a self-report measure of obsessive–compulsive disorder (OCD) that includes 7 subscales: checking, washing, obsessing, mental neutralizing, ordering, hoarding, and doubting. The OCI-R shows good internal consistency (4 of the 6 subscale alphas exceed .72), excellent test–retest reliability, and strong discriminant and convergent validity. Internal consistency was .88 in this sample.

Depression Anxiety Stress Scales (DASS) (Lovibond and Lovibond 1995)

The DASS is a 42-item instrument which measures symptoms of depression, anxiety, and stress (over the past week on scales consisting of 14 items, each rated from 0 (did not apply to me at all) to 3 (applied to me very much, or most of the time). Scores for each scale range from 0 to 42. The DASS-Depression scale examines dysphoria, hopelessness, self-deprecation, and lack of interest and involvement, and the DASS-Anxiety scale assesses autonomic arousal and fearfulness. The DASS demonstrated strong psychometric properties in both large clinical and non-clinical samples (Brown et al. 1997; Lovibond and Lovibond 1995). Internal consistency was .94 in this sample.

Psychometric Analyses

Two items originally included in the HEI were removed prior to analysis: (1) "Blocked exits" was excluded due to a low base rate as 57 % of participants rated this item 0 = no problem; and (2) "Summary of sanitary conditions" was removed because of its high correlation with all other items. To examine the factor structure of the remaining 24 items, the full sample (N = 793) was randomly divided into two subsamples. Given the limited literature on squalor, the HEI's latent structure was analyzed first using an exploratory factor analysis (EFA) in Sample 1 (N = 393). Items with factor loadings <.40 were removed and a second EFA was conducted on the same sample. This was followed by a confirmatory factor analysis (CFA) using Sample 2 (N = 400). Additionally, Sample 2 was used to examine concurrent and discriminant validity of the HEI in relation to measures of compulsive hoarding, depression and anxiety.

EFA was conducted with maximum likelihood estimation, promax rotation (SPSS, 15.0). The exploratory factor analysis was interpreted by the scree test, interpretability of the solution, and the strength of the parameter estimates (e.g.,

primary factor loadings >.40, absence of salient cross-loadings). The confirmatory analysis was obtained through the use of latent variable software and maximum likelihood function (Mplus 5.2, Muthen and Muthen 1998). Goodness of fit was evaluated using the root-mean-square error of approximation (RMSEA) and its 90 % confidence interval (90 % CI), p value for test of close fit (CFit; RMSEA <.05), standardized root-mean-square residual (SRMR) and CFI.

Results

Using Sample 1 ($N = 393$) the 24 HEI items were submitted to an EFA. A one-factor solution fit the data best, accounting for 28.67 % of the variance. Nine items (structural damage, exposed wiring, overgrowth, dead animals, body odor, opening the fridge, showering/bathing, doing laundry, and changing clothes) were dropped from the scale due to primary factor loadings less than <.40; loadings for retained items ranged from .436 to .698. A second EFA was conducted on Sample 1 using 15 items. Again, a one-factor solution representing home squalor provided an acceptable fit to the data according to the scree test, accounting for 39.8 % of the variance.[1]

Based on the solution obtained in Sample 1, a one-factor model was fit to the Sample 2 data (n = 400). This model provided a poor fit to the data, $\chi^2 (90) = 459.032, p < .001$, RMSEA = .07, 90 % CI .065−.078; SRMR = .045; CFI = .90. Fit diagnostics indicated that points of ill-fit were evident in the error covariances of 6 item pairs: 3 and 7, 11 and 12, 5 and 13, 7 and 14, 12 and 15, and 14 and 15. These items had the six highest modification indices pertaining to error covariances. When the CFA solution was re-specified to correlate the residuals of these items pairs, the revised model provided a better fit to the data, $\chi^2 (84) = 253.594, p < .001$, RMSEA = .050, 90 % CI .043−.058, SRMR = .035, CFI = .96. Fit diagnostics indicated no salient points of strain in the solution, and the item pairs noted above were significantly correlated as expected on the basis of their wording. These items had strong primary loadings ranging from .439 to .705. Factor item loadings were, fire hazard (.452), rotten food (.653), dirty/clogged sink (.588), standing water (.439), human/animal waste/vomit (.493), mildew/mold (.461), dirty food containers (.665), dirty surfaces (.705), piles of dirty/contaminated objects (.675), insects (.540), dirty clothes (.659), dirty bed sheets/linens (.628), house odor (.682), do dishes (.614), clean bathroom (.507). Cronbach's alpha for the 15-item factor-derived scale was .89, indicating good internal consistency.

To evaluate concurrent and discriminant validity of the HEI scale, we examined the correlations of HEI squalor to measures of hoarding, OCD symptoms and mood state, and compared the magnitude of these correlations using Steiger's differential validity analysis (Steiger 1980). We expected the HEI to be more strongly related to hoarding (HRS) than to other measures (OCI-R checking and washing; DASS depression, anxiety and stress). Pearson correlations of the HEI to these measures were: $r = .495$ for HRS-SR; $r = .204$ for OCI-R Checking; $r = .114$ for OCI-R Washing; $r = .334$ for DASS-Depression; $r = .276$ for DASS-Anxiety; and $r = .266$ for DASS-Stress. Comparison of these correlations confirmed that the HEI scale correlated significantly more strongly with hoarding (HRS) than with OCI symptoms of checking ($z = 6.67, p < .01$) and washing ($z = 8.51, p < .01$) or DASS scales of Depression ($z = 3.88, p < .01$), Anxiety ($z = 5.15, p < .01$) and Stress ($z = 5.37, p < .01$).

Interestingly, HEI squalor was not more strongly associated with depressed mood (DASS) compared to anxiety ($z = 1.27, p < .102$) or stress ($z = 1.49, p < .07$), but HEI squalor did appear to be more strongly correlated with mood variables than with OCD symptoms. This was evident in the following comparisons of HEI correlations with: DASS depression versus OCI checking ($z = 2.79, p < .01$); DASS depression versus OCI washing ($z = 4.63, p < .01$); DASS anxiety versus OCI washing ($z = 3.36, p < .01$); DASS stress versus OCI washing ($z = 3.14, p < .01$).

Total HEI score was significantly negatively correlated with age ($r = -.15, p = .01$); older participants had lower scores. There were no significant differences in total HEI score by gender ($t = .236$, df = 790, $p > .05$). Individuals who were single ($M = 15.37$, SD = 7.65) or separated/divorced/widowed ($M = 13.85$, SD = 7.30) had significantly higher HEI scores, $F (2, 779) = 34.12, p < .01$, than individuals who were married or living with a partner ($M = 10.86$, SD = 5.84). The mean score on the revised HEI scale was 12.96 (SD = 6.86) and the mean score on the original 26-item HEI scale was 17.83 (SD = 9.42).

Discussion

The current study examined the psychometric properties of the newly developed Home Environment Index (HEI) aimed at assessing squalor in hoarding populations. While squalor has been observed and studied across numerous psychiatric and neuropsychiatric conditions, this scale was developed to measure the phenomenon in those with hoarding. The psychometric basis of the HEI was established through evaluation of its factor structure, internal consistency, and construct validity in a large sample of individuals with self-reported

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[1] The original (26 item) and revised (15 item) HEI scales are available upon request from the corresponding author.

hoarding who participated in an internet study. After removing items that did not cohere with others on the scale, the HEI factor structure proved highly consistent across two replication samples and yielded one distinct 15-item factor that described squalor in the home and accounted for a substantial portion of the variance. The internal consistency of the factor derived scale was acceptable.

The HEI scale also evidenced moderate convergent validity in relation to measures of hoarding symptom severity and to a lesser extent with regard to depression, anxiety and stress symptoms (negative affect). The squalor scale showed good divergent validity in its stronger relationship to hoarding symptoms compared to measures of obsessive–compulsive symptoms and negative affect. The association of squalor with hoarding converges with prior observations of squalid conditions. The squalor scale also correlated significantly and somewhat more strongly with symptoms of depression and negative affect than with OCD checking and washing symptoms. This is consistent with previous literature on squalor that has indicated the presence of comorbid depression but has not described commonly co-occuring symptoms of OCD apart from hoarding (Halliday et al. 2000; Snowdon and Halliday 2011). That depression was not more strongly related to squalor than was anxiety or stress suggests that negative affect in general may be a feature of those with squalor symptoms rather than depression per se. Formalized assessments of mood and anxiety disorders in squalor samples have been limited. While one study noted the presence of both comorbid mood and anxiety disorders in a squalor sample (Halliday et al. 2000), another study pointed to depression as a comorbid diagnosis in some individuals with moderate levels of hoarding living in squalor but did not mention the presence of anxiety disorders (except for informal diagnoses of "obsessive" personalities; see Snowdon and Halliday 2011). Further study is needed to determine the comorbidity of Axis I mood and anxiety disorders in individuals with squalor. It is possible that people who hoard differ from the older samples commonly studied in domestic squalor in having a variety of negative affective states that trigger their hoarding behavior, consistent with current models of hoarding (see Steketee and Frost 2003).

In this hoarding sample, we were surprised to find that older age was associated with less squalid conditions, but the correlation was small. Gender did not influence squalor ratings. However, given that a large portion of the sample were middle aged women, further research is needed to clarify the relationship of squalid conditions to hoarding in elderly samples and in samples with a substantial representation of men. Squalid conditions were more often evident among people who were not married or partnered, perhaps because they were living alone without others to monitor the environment, or perhaps because their behavior discouraged others from living with them.

There are several limitations to this study. Because all data were collected through the internet and based only on self-report, a primary limitation is the absence of a semi-structured diagnostic interview to establish the presence of hoarding behavior. However, the primary measure used to assess hoarding symptoms, the Hoarding Rating Scale, contains questions covering the main diagnostic features of hoarding (clutter, difficulty discarding, impairment and distress) and has shown strong reliability and validity. As noted earlier, HRS scores suggested that these internet participants ranged from subclinical to clinical and represented a primarily clinical hoarding sample. Although the wide range of hoarding symptoms facilitated detection of a relationship of squalor to hoarding severity, additional testing of the HEI using both in-office and in-home self-report and clinician administration is needed in both hoarding and non-hoarding samples. The study was also limited by the demographic composition of the sample, which was predominantly female and Caucasian, limiting conclusions about squalor, hoarding and related characteristics in male and minority populations. Likewise, this internet study did not permit data collection on comorbid psychiatric conditions, preventing examination of the association of squalid conditions to other types of problems such as dementia, substance abuse, and severe mental illness as found in prior research (e.g., Snowdon and Halliday 2011). Additionally, data collected via the internet limited the sample to those who had access to, and an ability to navigate computers. This may have not only limited sample size and generalizability but could account for the predominance of Caucasian females. The limited sample demographics and lack of information on comorbid conditions suggests that the sample is most likely not entirely representative of the larger population of people with squalor. Nonetheless, data collection via the internet allowed the recruitment of a large sample for psychometric testing of the HEI, whereas previous studies of severe domestic squalor and squalor in hoarding have included relatively small samples.

Future directions for the HEI include (1) testing the instrument (including excluded original items) in a sample of individuals with hoarding who are diagnosed using standard diagnostic instruments, (2) use of non-hoarding control groups, (3) recruitment of a diverse sample including men and minorities, and (4) self- and assessor-rated HEI assessments conducted in the home as well as in the office. Utility of the instrument in determining cut-off scores that reflect behavioral evidence of squalor requiring public health or psychiatric intervention remains to be determined. The frequent observation of squalid conditions among people who hoard and the particular health and safety risks that hoarding poses warrant the need for a brief, valid assessment of squalor in this population. A scale such as this could be useful in a variety of community settings, such as mobile crisis

units, in-home case managers, and human service organizations assisting individuals with hoarding.

References

Abrams, R. C., Lachs, M., McAvay, G., Keohane, D. J., & Bruce, M. L. (2002). Predictors of self-neglect in community-dwelling elders. *American Journal of Psychiatry, 159*, 1724–1730.

Adams, J., & Johnson, J. (1998). Nurses perceptions of elderly people in squalor. *Journal of Clinical Nursing, 7*, 547–552.

Brown, T. A., Chorpita, B. F., Korotitsch, W., & Barlow, D. H. (1997). Psychometric properties of the Depression Anxiety Stress Scales (DASS) in clinical samples. *Behaviour Research and Therapy, 35*, 79–89.

Clark, A., Mankikar, G., & Gray, I. (1975). Diogenes syndrome: A clinical study of gross neglect in old age. *Lancet, 1*, 366–388.

Foa, E. B., Huppert, J. D., Leiberg, S., Langner, R., Kichic, R., Hajcak, G., et al. (2002). The obsessive-compulsive inventory: Development and validation of a short version. *Psychological Assessment, 14*, 45–96.

Frost, R. O., Steketee, G., & Grisham, J. R. (2004). Measurement of compulsive hoarding: Saving inventory-revised. *Behaviour Research and Therapy, 42*, 1163–1182.

Frost, R. O., Steketee, G., & Williams, L. (2000). Hoarding: A community health problem. *Health and Social Care in the Community, 8*, 229–234.

Gannon, M., & O'Boyle, J. (1992). Diogenes syndrome. *Irish Medical Journal, 85*, 124.

Halliday, A., Banjaree, S., Philpot, M., & MacDonald, A. (2000). Community study of people who live in squalor. *Lancet, 355*, 882–886.

Halliday, G., & Snowdon, J. (2009). The Environmental Cleanliness and Clutter Scale (ECCS). *International Psychogeriatrics, 21*, 1041–1050.

Kim, H. J., Steketee, G., & Frost, R. O. (2001). Hoarding by elderly people. *Health and Social Work, 26*, 176–184.

Lauder, W. (1998). A survey of self-neglect in patients living in the community. *Journal of Clinical Nursing, 8*, 95–102.

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the beck depression and anxiety inventories. *Behaviour Research and Therapy, 33*, 335–342.

Macmillan, D., & Shaw, P. (1966). Senile breakdown in standard of personal and environmental cleanliness. *British Medical Journal, 2*, 1032–1037.

Mataix-Cols, D., Billotti, D., Fernández de la Cruz, L., & Nordsletten, A. E. (2013). The London field trial for hoarding disorder. *Psychological Medicine, 43*, 837–847.

Muthen, L. K., & Muthen, B. O. (1998). MPlus 2.12 [Computer Software]. Los Angeles: Author.

Shah, A. K. (1992). Senile squalor syndrome: a small series. *Care of the Elderly, 4*, 299–300.

Snowdon, J. (1987). Uncleanliness among persons seen by community mental health workers. *Hospital & Community Psychiatry, 38*, 491–494.

Snowdon, J., & Halliday, G. (2011). A study of severe domestic squalor: 173 cases referred to an old age psychiatry service. *International Psychogeriatrics, 23*, 308–314.

Snowdon, J., Shah, A., & Halliday, G. (2007). Severe domestic squalor: A review. *International Psychogeriatrics, 19*, 37–51.

Steiger, J. H. (1980). Tests for comparing elements of a correlation matrix. *Psychological Bulletin, 87*, 245–251.

Steketee, G., & Frost, R. O. (2003). Compulsive hoarding: Current status of the research. *Clinical Psychology Review, 23*, 905–927.

Tolin, D. F., Frost, R. O., & Steketee, G. (2010). A brief interview for assessing compulsive hoarding: The Hoarding Rating Scale. *Psychiatry Research, 30*, 147–152.