# Acceptance of Shame and Embarrassment: scale development and initial findings in a clinical sample

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**Abstract**

Objectives

The ability to accept painful feelings is associated with decreased distress and better functioning. We set out to design an instrument that specifically measures acceptance of shame and embarrassment, as this may be important for the social functioning and mood of people with chronic conditions.

Methods

An item set was presented to 415 non-clinical adults and to 200 people with chronic pain. Item and factor analysis were used in the creation of an instrument; the reliability and validity of this instrument were examined. Regression analysis was used to examine the ability of this instrument to predict social functioning and mood in the clinical group.

Results

A 17-item unifactorial instrument was created that had good psychometric properties in both groups (the Acceptance of Shame and Embarrassment Scale, ASES). It correlated with other measures of acceptance, and of social discomfort. It had specific predictive power in the prediction of social functioning and mood in the clinical group.

Conclusions

The ASES is a reliable and valid instrument measuring the ability to accept shame and embarrassment. This ability is associated with better social functioning and mood in people with chronic pain; this form of acceptance should be targeted in treatment.

Key words: Acceptance, Shame, Chronic Pain, Mindfulness

## 1. Introduction

The Acceptance and Commitment Therapy model (ACT; Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Hayes, Strosahl, & Wilson, 2012 ) has gained support as a treatment intervention for physical health conditions (Hayes, Strosahl, & Wilson, 2012)!!!, and also as describing an empirically supported set of processes underpinning aspects of human distress and disability (Hayes, Levin, Plumb-Vilardaga, Villatte, & Pistorello, 2014).

In particular, acceptance of distressing thoughts and emotions, indexed by the Acceptance and Action Questionnaire (AAQ-II, (Bond et al., 2011) is a powerful variable in explaining psychopathology and outcomes across a number of conditions (Hayes, Levin, Plumb-Vilardaga, Villatte, & Pistorello, 2013b). There is increasing evidence that attempts to suppress or reduce unpleasant thoughts and feelings (often the agenda of psychotherapeutic treatment) can be counter-effective (e.g. Campbell-Sills, Barlow, Brown and Hofmann, 2006; Gross & Levenson, 1997; Sydenham, Beardwood & Rimes, 2017; Tran & Rimes, 2017; Watkins, 2008). Focusing on acceptance allows clinicians to develop techniques for situations where suffering may be irreducible (such as the case of chronic health conditions) or where attempts to control symptoms or distress cause further problems (e.g. Campbell-Sills et al., 2006; Ong, Ulmer, & Manber, 2012; Sydenham et al., 2017).

Exploration of ACT processes has necessitated the development of a range of psychometric instruments that index these concepts. For example, instruments have been developed to quantify values focus (Wilson, Sandoz, Kitchens, & Roberts, 2010), cognitive

defusion (Gillanders et al., 2014), and committed action (McCracken, Chilcot, & Norton, 2015). Domain-specific versions of the AAQ have also been developed – there are now versions specific to the fields of diabetes, substance misuse and the weight management (e.g. Gregg, Callaghan, Hayes, & Glenn-Lawson, 2007). In the field of chronic pain, the acceptance of pain, measured by the Chronic Pain Acceptance Questionnaire (CPAQ), is now one of the most thoroughly researched variables in the literature, associated with disability, distress, treatment outcome and subsequent relapse (Fish, McGuire, Hogan, Morrison, & Stewart, 2010; McCracken, Vowles, & Eccleston, 2004). ACT researchers have warned against using generic instruments where questionnaires that are tailored for the treatment domain might be more sensitive (Lillis & Hayes, 2008).

This study focuses on the acceptance of a particular set of emotions – shame and embarrassment. This arises from interest in the lives of people with disabilities and long-term health conditions. Such people have described as experiencing a common theme of "social awkwardness that interferes with ordinary social interaction" (p.202, Green, Davis, Karshmer, Marsh & Straight, 2005) when navigating the physical and interpersonal world with their condition. A distinction between 'visible' and 'invisible' disabilities has been made (Goffman, 1963); in qualitative research, those with visible disabilities have described (for example) other people that "see the wheelchair before they see me", those with less visually evident problems have described people looking at them when they use a disabled parking space (Green et al., 2005).

Many emotions can be evoked by such difficulties, but researchers have recently come to focus on the previously-neglected area of Self-Conscious Emotions (SCEs) such as embarrassment, shame and guilt. Specifically, qualitative research with people with chronic

pain has identified shame as central (Smith & Osborn, 2007), and quantitative studies have begun to support this (Turner-Cobb, Michalaki & Osborn, 2015). As stigmatising attitudes to people with disability are common in Western cultures (Van Brakel, 2006), it seems likely it will be beneficial for individuals with chronic conditions to be able to to 'accept' the emotions that go with difficult social encounters, as both stigma and the natural human reaction to this are likely to be inevitable. Anecdotally, patients involved in behavioural chronic pain treatment (who can carry either a visible or invisible disability) seem to regularly encounter situations where refusal to encounter embarrassment and shame will limit their ability to live well. Our focus on embarrassment and shame meant that we were choosing a narrow and relatively well-defined area of the SCEs; this study had no focus on other SCEs such as guilt or pride.

We approached this study interested in the experience of shame and embarrassment in the everyday lives of people with disabilities and chronic conditions. However, we are aware that this is a difficult conceptual field and definitions of these emotions are far from clear. Many features have been proposed that might clearly distinguish shame from embarrassment, (e.g. culpability, severity, a moral component) but there is no consensus about which features distinguish these emotions (Crozier, 2014). A number of well-validated shame questionnaires are available, but examination of the items in these instruments indicates that they do not seem to relate to the type of social awkwardness (described in research above) at that we wish to highlight, instead focusing on shame as related to moral transgression, or shame that can be the result of trauma. These other aspects of shame are of great interest, but they are not the issues highlighted as relevant to people with disabilities in the research above. For example, two well-validated measures of shame, the

GASP (Cohen, Wolf, Panter & Insko, 2011) and ToSCA (Fontaine, Luyten, De Boeck & Corveleyn, 2001) also cannot be completed unless the respondee is in employment, as many items relate to what a person might feel in a given workplace situation. This evidently limits their application to clinical populations where patients with severe physical or emotional problems may not be able to work. One measure of shame aversion has been developed, the ShARQ (Schoenleber & Berenbaum, 2010), but it was developed without reference to the ACT model, focusing on features seen in with people with Cluster C personality disorders, rather than on issues that might apply to people with chronic conditions.

Thus, we set out to develop an instrument that could index the willingness to accept everyday, interpersonal shame and embarrassment in non-clinical and clinical populations. Although our interest arose from emotions commonly experienced by people with disabilities, we chose to frame the instrument broadly in order for it to be potentially relevant across other clinical populations, and to people without health difficulties. To carry out the study, we also required a measure of the intensity of a person's embarrassment / shame, where existing shame measures seemed inappropriate. We chose to use the concept of Fear of Negative Evaluation (FNE, Rodebaugh, 2004) to represent this intensity, finding that items from the Brief FNE scale met our needs best (e.g. "I am usually worried about what kind of impression I make"). After creating a new acceptance instrument, we aimed to study the association between the willingness to accept shame and embarrassment and social and role functioning in population of people with a chronic health condition, specifically chronic pain.

## 2. Materials and Methods

### *2.1 Participants*

Two samples of participants were used in this study; a non-clinical sample, who completed study measures online, and a clinical sample of patients being treated in a chronic pain service who completed paper questionnaire packs.

The non-clinical sample included 415 (310 female; 100 male; 5 gender undeclared) participants. Their mean age was 25.1 (*SD* = 9.6). The sample comprised undergraduate students (54.1%), postgraduate students (8%), and people who were working full-time (26.5%), as well as other community members (11.4%). The participants were from the United Kingdom (38.7%), the United States (39.2%), Canada (3.9%), and other countries (18.2%). The sample were not asked to complete a screen for self-reported disability or chronic health problems.

The clinical sample consisted of 200 participants with a mixture of non-malignant chronic pain diagnoses. All participants were attending an initial assessment appointment for treatment at a tertiary national specialist UK chronic pain treatment service. Clinical criteria for this service meant that all participants were experiencing complex pain-related disability associated with their condition and considerable emotional distress. Mean age was 41.8 yrs (SD=13.4) and average pain duration was 9.7 yrs (SD=8.2). 59% of the sample were female, 95.4% being white. Participants experienced pain in their lower backs (51%), lower limbs (21%), across their whole bodies (8%) and in other locations (20%). The pain had been precipitated by an accident in 40% of cases, with no clear trigger in 25% of cases, and by surgery or illness (both 9%; other causes 17%). They had seen, on average, 6.2 (SD=4.0) doctors for their pain and the mean number of pain-related surgeries was 1.7 (SD=2.5). They experienced high levels of pain (mean 7.7 (SD 1.5), 0 – 10 Numerical Rating Scale (NRS)),

fatigue (7.9 (SD 1.8), 0 – 10 NRS) and depression (88.8% above clinical cut-off on the Patient Health Questionnaire-9, PHQ-9 (Martin, Rief, Klaiberg, & Braehler, 2006)).

### *2.2 Procedures*

All participants completed a battery of standardised questionnaires and a preliminary set of questions that were intended to index the willingness to accept shame and embarrassment. For the non-clinical participants, the materials were made available online. Some participants were undergraduate psychology students at a local University who could participate in order to earn course credits; this study was one of many on their department's website. Also, the study was advertised on websites such as www.onlinepsychresearch.co.uk or www.socialpsychology.org . These sites were a common hosting space for online studies where essentially volunteer to participate; this study was one of many options available. Members of the public could be members of the sites, or receive prompts and adverts for them via Twitter and other social media platforms. The study remained on these sites for two months.

Ethical clearance was gained from the relevant Department of Psychology Research Ethics Committee. Participants read an information sheet and consent form, online and were instructed that completing the survey constituted consent. By completing the questionnaires, we presumed that participants had adequate written English skills; we did not include any form of language screening, or health screening questionnaire to exclude those with clinically significant long-term health conditions.

For participants in the clinical sample, ethical clearance for the study was gained from the appropriate NHS Research Ethics Committee, and Hospital Research and Development committee. Potential participants were approached at the time of their assessment appointment, and given an information sheet and consent form. A clinician explained these

to the participants, who were free to give, or decline, written, informed consent. All participants were informed both verbally and in writing that the study was voluntary and that non-participation would not affect their medical care in any way.

### *2.3 Measures*

Participants were given (1) an item set of proposed questions for the new questionnaire, (2) several questionnaires aimed at establishing validity that were given to both the non-clinical and clinical groups (for example, an acceptance measure), and (3) some measures that were only appropriate for a clinical population, and thus only given to the clinical group (for example measures of pain acceptance and pain-related fear).

#### *2.3.1 Item Set*

Draft items for the proposed scale were generated by experienced clinicians (JGG and KR) to reflect the acceptance (or non-acceptance) of embarrassment and shame. Items were created to reflect two theoretical aspects of acceptance that are seen in the widely-used Chronic Pain Acceptance Questionnaire, CPAQ (Fish, Hogan, Morrison, Stewart, & McGuire, 2013). These components were “willingness” (willingness to have the experience as it is without terminating it) and “engagement” (willingness to keep doing what you are doing in spite of that feeling); positively and negatively keyed items were created for each component. Draft items were presented to a clinical team of pain specialists with ACT experience, who made comments around readability, theoretical precision and clinical relevance. Modifications were made, and after this process the final item set was defined (see Appendix). These 23 items were rated on a 7-point scale (*0=never true, 1=very rarely true, 2= seldom true, 3=sometimes true, 4= often true, 5=almost always true, 6= always true*).

*2.3.2 Questionnaires for validity – given to non-clinical and clinical groups*

***Brief Fear of Negative Evaluation Scale*** *(BFNE* (Rodebaugh et al., 2004)*).* This scale was developed to assess the extent to which individuals experience distress and apprehension over other's negative evaluation and has been shown to be reliable and valid (Leary, 1983). Here, we used it as an index of an individual's overall level / intensity of distress in social situations. This scale has 12 items and each item is rated on a 5-point scale for example, "I worry about what other people will think of me even when I know it doesn't make any difference". In the clinical sample, the BFNE-S, which is an 8-item version of the BFNE, was used to measure fears of negative evaluation (α = .93, (Rodebaugh et al., 2004)). The shorter version was chosen due to the greater questionnaire burden on the clinical sample, who both completed more items and had established problems with pain and fatigue. Cronbach's alpha for the clinical sample in this study was α = .95.

***Acceptance and Action Questionnaire (AAQ-II).*** The AAQ-II was designed to measure general acceptance of private internal experiences (i.e., bodily sensations, thoughts, memories and emotions). It includes items such as, "It's okay if I remember something unpleasant" (Bond et al., 2011). Responses are given on a seven-point scale; a higher score suggests greater psychological flexibility and acceptance. The AAQ-II's reliability and validity have been established across multiple samples (Bond et al., 2011). In the current clinical sample, α = .89.

***Philadelphia Mindfulness Scale (PHLMS)*** (Cardaciotto, Herbert, Forman, Moitra, & Farrow, 2008)*)* The PHLMS has two components: present-moment awareness and acceptance. The awareness subscale is assessed with items such as, "I am aware of what thoughts are passing through my mind", and the acceptance subscale is measured by items such as, "I try

to distract myself when I feel unpleasant emotions" (Cardaciotto et al., 2008). This scale has 20 items (10 awareness and 10 acceptance), and each item is rated on a 5-point scale Higher scores reflect a higher level of awareness and acceptance. Both the Awareness and Acceptance subscales are internally consistent in population samples (α = .81 and α = .83 respectively). In the clinical group in the current sample, α = .83.

***Patient Health Questionnaire (PHQ-9)*** (Martin et al., 2006)*).* This 9-item measure is widely used reliable and valid scale for screening and diagnosing depression (e.g., Kroenke, Spitzer, & Williams, 2002); a sample item is "Little interest or pleasure in doing things". The scale asks the frequency of each symptom on a 4-point scale. Higher scores reflect higher levels of depression. In general, scores above 20 indicate major depression, scores of 15-19 indicate moderately severe depression, scores of 10-14 indicate minor depression, and scores of 5-9 reflect minimal symptoms. In the clinical sample in the current study, α = .79.

***EQ-5D-5L*** (Brooks, 1996)*.* EQ-5D-5L was developed to measure health status and Quality of Life. This measure has five dimensions: mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. Each dimension has five levels, from 'no problems' to 'extreme problems'. In this study, summary scores were calculated following the method of Hinz, Kohlmann, Stobel-Richter, Zenger & Brahler, 2014, with the five dimensions and levels yielding a single score between 0 and 100. This method of scoring the EQ-5D-5L has been shown to be equivalent to more complex health utility scores, and vastly simpler (Hinz et al., 2014). In the clinical sample, in this study α = .71.

*2.3.3 Questionnaires only given to the clinical group*

***Pain rating NRS****.* Participants in the clinical sample rated their 'usual pain' on an 11-point numerical rating scale (0 – no pain at all, 10 – worst pain possible) (Farrar, Young, LaMoreaux, Werth, & Poole, 2001).

***Sickness Impact Profile (SIP)*** *(Bergner, Bobbit, Carter, & Gilson, 1981) .* The SIP is a measure of health status and daily functioning consisting of 136-items across 12 subscales. Respondents are asked to tick statements that describe them at the time of answering and are related to their state of health (e.g. "I am not doing heavy work around the house"). A weighted sum reflecting levels of disability is calculated for each subscale. Subscales can then be combined to calculate a Total score, a Physical disability score and a Psychosocial disability score. We used the Psychosocial disability score in this analysis to reflect psychosocial functioning / social and role functioning. The SIP has been shown to have excellent internal consistency (*α = 0.92*, Bergner et al., 1981) and good construct validity; in this study α = .92.

***Pain Anxiety Symptoms Scale (PASS)*** *(McCracken & Dhingra, 2002).* The Pain Anxiety Symptoms Scale fearful and anxious responses to pain, for example, "pain sensations are terrifying". The version used here was the 20-item short form. Items are scored on a 6 point Likert scale ranging from 0 ("never") to 5 ("always"). The PASS-20 has been shown to have good construct validity and strong internal consistency and reliability; in the current study, the scale's α = .88.

***Chronic Pain Acceptance Questionnaire (CPAQ),*** (Vowles, McCracken, McLeod, & Eccleston, 2008)*) .* The Chronic Pain Acceptance Questionnaire (CPAQ) measures acceptance of pain, with 'acceptance' defined according to the ACT model. There are 20 items that can be split into two subscales (Activity Engagement and Pain Willingness). Items are rated on a scale

from 0 (never true) to 6 (always true). The Total score was used in this study, which has previously been shown to have good reliability and to be a predictor of distress and functioning (Fish et al., 2010). The total score had, in this study an alpha of $\alpha = .87$.

### *2.4 Analytic strategy*

We aimed to (1) create a new questionnaire from our initial item set that had satisfactory psychometric properties in both non-clinical and clinical groups, (2) to examine its validity, both construct and concurrent, and (3) to establish the usefulness and specific contribution of the questionnaire in our clinical sample by examining it alongside established instruments. To this end, selected items by inspecting item-total correlations and factor loadings in order to establish a questionnaire that was internally consistent and useful in both groups. We compared the clinical, and non-clinical, groups' scores on this new measure. We used a correlational analysis to establish the convergent validity of the new scale by comparing it to other, broader, measures of acceptance and embarrassment / shame. Specifically, we predicted that the ASES would be correlated with the BNFE, and with the other acceptance instruments (CPAQ and AAQ-II).

Finally, we were interested in the potential for the new scale to be a useful and specific predictor of social functioning (here indexed by the SIP Psychosocial disability score) and mood (here, depression indexed by the PHQ-9) in a clinical sample. Thus, in the clinical sample, we carried out hierarchical regression analyses using these two dependent variables, introducing the new scale after other, established predictors, to see whether the new instrument had incremental validity. It was theoretically important to explore whether the ASES could still add predictive power after accounting for the intensity of social distress

(indexed by the BFNE-S; we predicted that the ASES would add predictive power). Also, the chronic pain literature has consistently shown that pain-related fear and acceptance of pain are reliable predictors of functioning and distress. Thus, we investigated whether the ASES was able to add incremental predictive power after these variables were controlled (pain-related fear, PASS; acceptance of pain, CPAQ; we predicted the ASES would indeed be add predictive power). Finally, the AAQ-II is the other key index of acceptance (acceptance of thoughts and feelings in general) in the broader ACT literature. Although we did not necessarily expect the ASES (a 'narrower' acceptance instrument) to outperform the AAQ-II (a 'broader' instrument of general acceptance) we nonetheless examined whether the ASES could add predictive power after the inclusion of the AAQ-II in the regression equation. For the sake of clear hypothesis testing, we predicted that the ASES would account for extra variance after the inclusion of the AAQ-II. Alpha was set at $< 0.01$ to allow for multiple comparisons.

## 3. Results

### *3.1 Questionnaire creation*

#### *3.1.1 Item selection and factor analysis: non-clinical sample*

Initially, the distribution of data for each item for the new scale was examined and found to be normal by checking skewness and kurtosis values; corrected item-total correlations were then calculated. One item did not correlate appropriately with the scale's total score and was eliminated (Item 2, "Nothing is so important that it is worth feeling ashamed or humiliated for").

A principal factor analysis with a varimax rotation was conducted with a cut-off point of .4 for the inclusion of a variable in the interpretation of a factor. Since the aim was to have maximally distinct factors, a varimax rotation was selected. However, an oblimin rotation produced essentially the same pattern of loadings. Eigenvalues of the first three factors were 9.77, 1.16, and .62; these values, and inspection of the scree plot, suggested a one-factor, or a two-factor (according to the eigenvalue > 1 criterion) solution. The first two factors explained 44.4 % and 5.3% of the variance, respectively. As the second factor was hard to interpret and accounted for only a small amount of variance, it was decided that a one-factor solution was most reasonable and meaningful. Thus, a principal axis factoring analysis was conducted, specifying one factor to be extracted. The factor explained 44.1% of the variance. Items 12, 9, 17 and 19 did not load on the factor, having values lower than .4. Factor loadings can be seen in Table 1.

*3.1.2 Item selection and factor analysis: clinical sample*

A similar process was followed for the clinical sample's data, which were also normally distributed. Item-total correlations again indicated that Item 2, correlated negatively (-.36) with the measure's total score. It was eliminated from the analysis. A similar factor analysis was carried out; eigenvalues of the factors were 9.34, 1.54, 1.37, and 1.21. Factor one explained 42.5% of the variance and factor 2 explained 7% of the variance. Again, a one factor solution seemed most reasonable and intelligible. Thus, a principal axis factoring analysis was conducted, specifying one factor to be extracted. The factor explained 43% of the variance. Items 5, 9, 17 and 19 did not load on the factor, having values lower than .4.

We wanted a scale that could be used in both non-clinical and clinical groups. Thus, item 2 was dropped due to poor construction / item-total correlation, and all items that did

not load on the main factor (< .4) in either group were eliminated (5, 9, 12, 17, 19 – see Appendix), leaving a 17-item scale, the Acceptance of Self-Consciousness and Embarrassment Scale (ASES, Appendix). Factor loadings for the clinical and non-clinical samples are seen in Table 1.

********* Table 1 about here please *********

***3.2 Establishing Reliability and Validity of the ASES***

Cronbach's alpha was calculated for the new 17-item scale; for the non-clinical sample, alpha was .94, and for the clinical sample alpha was .93. Forty-seven participants from the non-clinical sample completed a retest of the ASES after an interval of at least 15 days (*Mean*=27.4, *SD*= 11.3). The new 17-item scale had good test-retest reliability, $r$ =.92, $p$<.001.

We aimed to establish construct validity by comparing the ASES with established measures of (1) acceptance (the AAQ-II and the Acceptance subscale of the PHLMS), and (2) an established measure of self-consciousness and embarrassment (the BFNE).

Table 2 shows the correlation matrices between the new scale and existing measures for the non-clinical sample. The ASES showed appropriate associations with theoretically similar measures, that is, positive correlation with the AAQ-II and the acceptance subscale of the PHLMS, and negatively associated with fear of negative evaluation (the BFNE). Scores on the ASES were also consistently associated with distress and wellbeing, with greater acceptance of shame and embarrassment being associated with less depression, better health-related Quality of Life, and success in living according to one's values (all $p$ < .01). A similar pattern of results was seen for the clinical sample, also supportive of the scale's validity, although there was no association between the ASES and success in valued living

(Table 3). We compared total scores on the ASES between non-clinical and clinical groups, using an independent-samples t-test; they were not significantly different ($t(510) = -.77$, $p = .43$).

******** Table 2 about here, please *********

******** Table 3 about here, please *********

### *3.3 Regression Analysis in the clinical sample*

From the above analyses, there was some evidence for the ASES's construct and concurrent validity; however, we were specifically interested in its ability to predict social functioning and mood in our physically and emotionally distressed sample. Of course, many other instruments have been shown to predict these variables in the chronic pain literature. Thus, we chose the SIP Psychosocial score to index psychosocial functioning, and the PHQ-9 as a measure of mood. In order to assess whether acceptance of shame and embarrassment (ASES) accounted for unique variance in these variables, we used hierarchical regression analysis, introducing the ASES after other established variables were controlled for.

We initially explored whether the dependent variables were correlated with any demographic or pain-related variables. There was no association between the dependent variables (psychosocial functioning and depression) and age, sex, education, or chronicity of pain (all $p > 0.05$). However, both psychosocial functioning and depression were associated with usual pain intensity ($p < 0.01$). Thus, pain intensity was controlled at the beginning of all of the regression equations below.

Table 4 shows the correlations between the dependent and independent variables; all variables were significantly correlated with the dependent variables (all $p < 0.01$), and often with each other. Thus, we progressed to regression analysis to discern the specific contribution of each variable a.

******** Table 4 about here, please *********

We first investigated predictors of psychosocial functioning. Table 5 shows three hierarchical regression analyses. (In Tables 5 and 6, beta coefficients are cited for each variable in the block where it was introduced.) In the first, pain was entered in the first block, fear of negative evaluation in the second block (BFNE), and the acceptance of shame / embarrassment (ASES) in the third. Each block accounted for a significant incremental amount of the variance (all $p < 0.01$), and specifically the ASES accounted for a significant unique amount of variance after pain and fear of negative evaluation were controlled for. In the final equation, only the beta coefficient for the ASES remained significant ($\beta = -.26$, $p < 0.01$; other variables' βs all $p > 0.01$). A similar analysis was carried out for pain-related variables; pain intensity was included in block 1, both pain-related fear and acceptance of pain in block 2, and then ASES in block three. The pattern of results was identical; all blocks added a significant amount of variance, and the ASES accounted for a significant increment in variance after all pain-related variables had been controlled out. In the final equation, only the beta coefficient for the ASES remained significant ($\beta = -.23$, $p < 0.01$; other variables' βs all $p > 0.01$). However, in the third equation, where the ASES was added after a measure of general acceptance (the AAQ-II), it did not add a significant increment in predictive power ($p > .05$).

These analyses were repeated for depression (PHQ-9; see Table 6). All variables in the first equation added incremental amounts of variance when added, and specifically ASES was a unique predictor of depression after pain, and intensity of embarrassment, were accounted for. In the final equation, the beta coefficients for both pain and the ASES remained significant (pain, $\beta = .22$, $p < 0.01$; ASES, $\beta = -.33$, $p < 0.01$; other variables, all $\beta$s $p > 0.01$).

A similar pattern of results was seen for the second equation; again, ASES accounted for a significant unique proportion of the variance after the other variables were controlled for; in the final equation, fear of pain and acceptance of pain ceased to be significant predictors of depression, leaving pain intensity and ASES as statistically significant predictors (pain, $\beta = .25$, $p < 0.01$; ASES, $\beta = -.35$, $p < 0.001$; other variables, all $\beta$s $p > 0.01$). Results in the third equation were similar to those for psychosocial disability; the ASES did not add incremental predictive power when added into the regression equation after the AAQ-II.

******** Tables 5 and 6 about here, please *********

## 4. Discussion

This study included the creation and validation of a questionnaire to index the acceptance of shame and embarrassment (ASES), including the willingness to experience these emotions and to persist in behaviours that elicited these feelings. Items were created that addressed the conceptually precise sense of 'acceptance' used in ACT and applied this to the shame and embarrassment that can be aroused in socially awkward interactions. The resulting 17-item scale was valid, reliable over time, internally consistent and unifactorial; it demonstrated these properties in both non-clinical and clinical groups. The ASES was

associated with distress and life functioning in non-clinical and clinical groups, and it was often a specific and incremental predictor of social and role functioning, as well as depression, in a clinical group, even when other well-established variables were accounted for.

As anticipated, the ASES was highly correlated with the AAQ-II, yet in both samples, >40% of the variance did not overlap between the two, supporting the AAQ-II's role as a measure of a broader range of emotions, and the value of the ASES as an independent instrument. Our results suggested that ASES was best seen as a unifactorial scale, even though items were designed reflect two aspects of acceptance seen in the CPAQ. Also, some of the excluded items were of interest. The item "I regularly go into situations where I might feel embarrassed or awkward" was excluded, reinforcing the fact that acceptance of unpleasant emotions does not necessarily mean seeking them out. The initial analysis of the ASES showed that there was no difference in total mean scores between the clinical and non-clinical samples. We did not predict any difference in the way that people with chronic pain relate to the emotions of shame and embarrassment, as we saw no *a priori* reason to predict that people with chronic pain were interpersonally unusual, or dealt with self-conscious emotions differently (although they may well be exposed to more socially awkward situations). Of course, alternative predictions were possible, whereby people with pain begin to avoid such emotions after repeated exposure. However, results did not support this.

These data provided preliminary evidence consistent with the idea that acceptance of shame and embarrassment may impact on people's lives. Willingness to accept shame and embarrassment was associated with lower levels of depression, and increased quality of life

in both samples. There was no a priori reason to presume that these variables would show similar relationships in both groups, and indeed it would be reasonable to make alternative predictions. For example, it might be assumed that participants in the clinical sample would be struggling (they were seeking treatment), and would have regular experiences of embarrassment related to their health condition. It might be predicted that the non-clinical group, having lower rates of visible, health-related triggers for embarrassment, might show a different pattern of results. However, this was not the case; the same relationships were found in non-clinical participants. Thus, acceptance of shame and embarrassment may be a psychological construct with broader applicability beyond health care.

In the clinical sample, the ASES correlated negatively with all aspects of disability and distress, with the exception of pain intensity. Thus, it seems that unwillingness to experience shame and embarrassment is not simply a consequence of being exhausted or demoralised by intense pain sensations. It also follows that the presence of intense pain should be no barrier to the development of this type of acceptance. We were specifically interested in the ASES's ability to predict social and role functioning, and depression. Both of these dependent variables were unsurprisingly also correlated with other established variables such as pain-related fear and acceptance of pain. Nonetheless, the ASES accounted for incremental amounts of variance in all analyses apart from those including the AAQ-II. Thus, it adds predictive value to the most thoroughly-researched variables currently known to the pain literature (pain acceptance and pain fear), and also to a measure of intensity of distress in social interactions (here, indexed by the BFNE). Indeed, in the final regression equations all of these other variables became non-significant alongside the ASES. This is noteworthy given the established predictive power of pain-related fear and acceptance. It

seems that it is not simply the presence or intensity of embarrassment and shame that is the key barrier to functioning; rather it is the ability to accept these inevitable emotions. This is a significant step in establishing the divergent validity of the ASES.

Thus, these preliminary data support the potential clinical usefulness of attending to the acceptance of shame and embarrassment. However, ACT is commonly seen as enhancing the ability to accept all difficult emotions, raising the question of whether focusing on this narrower range is useful. This study did not demonstrate the incremental value of the ASES over the AAQ-II in a head-to-head test in regression; we had decided to test this hypothesis, and selected dependent variables (i.e. social and role functioning) where we might have expected to see such a result. It could be argued that this limits the potential usefulness and interest of the ASES. However, incremental validity can be established in a range of ways, and a number of AAQ-variant questionnaires have successfully been established without such a strict test of comparison with the AAQ-II (e.g. Luoma, Drake, Kohlenberg & Hayes, 2011). Also, the ASES did demonstrate incremental validity above the CPAQ in a pain population, being one of the few instruments to do so (McCracken & Zhao-O'Brien, 2010). Nonetheless, for the ASES to be fully accepted as a research too, future research needs to demonstrate its specific contribution. We would hypothesise that it would outperform the AAQ-II in clinical populations where visible disability and difference are a prime concern. In the current study, the clinical sample incorporated those with visible problems in mobility and ambulation, and those without.

In hindsight, we may also not have expected an instrument with narrower scope (looking at a small number of emotions) would outperform one with a more universal focus which addresses potentially all thoughts and emotions. However, the ASES still offers specific

advantages over a broader instrument such as the AAQ-II. A generic acceptance instrument such as the AAQ-II does not allow hypothesis-testing around the role of accepting specific emotions; this is important given the historical neglect of the self-conscious emotions in the pain literature. Also, whilst it is a broadly useful instrument, the AAQ-II has been criticised for the breadth of its content and the fact that many of its items appear to relate more to general distress (e.g. “Emotions cause problems in my life”) than to the precise concept of emotional acceptance (Wolgast, 2014). We believe that the ASES items are carefully designed to reflect the technical concept of acceptance and that they largely avoid reflecting generic distress.

This study has limitations, including the cross-sectional nature of the data, and some lack of data about the non-clinical group. We have labelled the internet sample participants as ‘non-clinical’; although they were not recruited from a clinical context, we did not screen them for clinical conditions or disabilities, and as such cannot rule out that some may have had relevant health conditions. We have also argued for the potential treatment value of accepting shame and embarrassment, yet data specifically supporting this idea will only come from future longitudinal and treatment process studies. Similarly, our use of the word ‘predictor’ relates to its technical use in regression, rather than to an established causal role. We wished to show that acceptance of shame and embarrassment was more important than intensity of embarrassment and shame. To this end, we used the Fear of Negative Evaluation (BFNE) as the ‘intensity’ measure and we must acknowledge that it is an imperfect one. Its items were far better suited to this study than those from ‘shame’ questionnaires, yet it is potentially biased towards social anxiety, using words such ‘worry’ and ‘afraid’. Of course, there is a substantial conceptual overlap between ‘embarrassment’

and ‘social anxiety’ – it is impossible to imagine one without the other – yet future studies may choose different instruments. We chose it as we, and a team of experienced clinicians, felt it best reflected the emotions of people with chronic health conditions felt when encountering unforgiving social environments. We used two different versions of the BFNE across the non-clinical and clinical groups; whilst our intention, to reduce question burden for the clinical group, makes sense, this was arguably not ideal for research purposes.

The items of the ASES were purely expert-developed in order to emphasise conceptual precision. However, the absence of patient perspectives from this process is a weakness. Also, there is one cognate questionnaire measuring ‘shame aversion’ that we did not include in this study (Schoenleber & Berenbaum, 2010). We felt that the items (e.g. “Feeling inadequate troubles me more than anything else”), and the conceptual focus on personality disorder traits, were not appropriate for this study. However, it could also be argued that it is the only other measure that might have provided a measure of convergent validity for a new shame / embarrassment acceptance questionnaire.

Future research should examine the ASES in treatment process and longitudinal studies. This instrument may also be productively used in research areas beyond pain; for example, many congenital and acquired health conditions leave people with visually evident differences or disfigurement. It would also be interesting to use this questionnaire with people with stigmatised characteristics other than physical health conditions. Finally, the dominant and most successful model of social anxiety treatment remains cognitive behavioural therapy (CBT). CBT emphasises the reduction and minimisation of social fears (and by extension, embarrassment) as a treatment goal. It may be productive to introduce

the ASES to this area, and to explore the opposing idea that difficult self-conscious emotions could be a target for acceptance rather than change.

**Declaration of interests**

The authors declare that there are no conflicts of interest with regard to the research work described in this paper.

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**Table 1: Factor loadings for items: non-clinical and clinical sample**

| ASES | Non-clinical | Clinical |
|---|---|---|
| 14. I can't bear feeling embarrassed or ashamed | -.842 | -.830 |
| 10. I can put up with being embarrassed or ashamed without too much difficulty | .829 | .797 |
| 20. I don't mind if I feel embarrassed | .820 | .569 |
| 7. My life is not restricted by fear of embarrassment | .786 | .754 |
| 18. There are situations that I am not willing to go into because I might feel ashamed or embarrassed | -.774 | -.811 |
| 6. I don't let feeling embarrassed get in the way of doing things I want to do | .753 | .794 |
| 3. If I start to feel embarrassed or ashamed, I have to leave the situation | -.730 | -.777 |
| 1.If I get embarrassed around other people, I can live with it | .729 | .745 |
| 16. Being in embarrassing situations is better than avoiding things | .717 | .745 |
| 4. When I get embarrassed I accept this as a normal part of life | .711 | .796 |
| 8. I am not prepared to feel stupid or humiliated in front of other people | -.705 | -.426 |
| 13.If I am doing what's important to me, being embarrassed is worth it | .702 | .713 |
| 23.I always try to let people see the 'real me', even if it makes me feel foolish | .661 | .685 |
| 11. I hate it when I feel that people are judging me | -.618 | -.712 |
| 21. I am no longer doing things that matter because other people might judge me or give me a hard time | -.601 | -.633 |
| 15.I often hide what I am really like | -.591 | -.662 |
| 22. If I feel judged I get very defensive | -.487 | -.516 |

**Table 2: Correlations in non-clinical sample**

| | ASES | BFNE | AAQ-II | Awareness (PHLMS) | Acceptance (PHLMS) | PHQ-9 |
|---|---|---|---|---|---|---|
| **ASES** | | | | | | |
| **Fear of Neg Evaluation** (BFNE) | -.77** | | | | | |
| **General Acceptance** (AAQ-II) | .67** | -.62** | | | | |
| **Awareness** (PHLMS) | .11* | .01 | .08 | | | |
| **Acceptance** (PHLMS) | .51** | -.50** | .73** | -.05 | | |
| **Depression** (PHQ-9) | -.33** | .44** | -.71** | .01 | -.58** | |
| **Quality of Life** (EQ-5D-5L) | -.40** | .33** | -.61** | .00 | -.46** | .71** |

*Note*. ASES= Acceptance of Shame and Embarrassment Scale; BFNE= Brief Fear of Negative Evaluation Scale; AAQ-II= Acceptance and Action Questionnaire; PHLMS= The Philadelphia Mindfulness Scale; CPVI =Chronic pain values inventory; PHQ-9= Patient Health Questionnaire; Health= Health score at the end of the EQ-5D-5L questionnaire. * $p < .01$, ** $p < .001$

**Table 3: Correlations in clinical sample**

| | ASES | BFNE | AAQ-II | Awareness (PHLMS) | Acceptance (PHLMS) | PHQ-9 |
|---|---|---|---|---|---|---|
| **ASES** | | | | | | |
| **Fear of Neg Evaluation** (BFNE) | -.74** | | | | | |
| **General Acceptance** (AAQ-II) | .66** | -.67** | | | | |
| **Awareness** (PHLMS) | .01 | .10 | -.12 | | | |
| **Acceptance** (PHLMS) | .48** | -.46** | .55** | -.23* | | |
| **Depression** (PHQ-9) | -.53** | .49** | -.64** | -.15 | -.33** | |
| **Quality of Life** (EQ-5D-5L) | -.37** | .21* | -.31** | -.04 | -.14 | .37** |

*Note*. ASES= Acceptance of Shame and Embarrassment Scale; BFNE= Brief Fear of Negative Evaluation Scale; AAQ-II= Acceptance and Action Questionnaire; PHLMS= The Philadelphia Mindfulness Scale; CPVI =Chronic pain values inventory; PHQ-9= Patient Health Questionnaire; Health= Health score at the end of the EQ-5D-5L questionnaire. * $p < .01$, ** $p < .001$

**Table 4: Clinical sample: Correlations**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| **1. Psychosocial Disability** (SIP) | | | | | | | | |
| **2. Depression** (PHQ-9) | .64** | | | | | | | |
| **3. Acceptance of shame and embarrassment** (ASES) | -.45** | -.53** | | | | | | |
| **4. Pain intensity** (usual pain 1 – 10) | .22* | .30** | -.14 | | | | | |
| **5. Fear Neg Evaluation** (BFNE) | .45** | .49** | -.74** | .16 | | | | |
| **6. Pain-related fear** (PASS) | .44** | .45** | -.47** | .18 | .40** | | | |
| **7. Acceptance of Pain** (CPAQ) | -.46** | -.47** | .46** | -.31** | -.32** | -.63** | | |
| **8. General Acceptance** (AAQ-II) | -.53** | -.64** | .69** | -.23* | -.67** | -.50** | .54** | |

* $P < .01$, ** $P < .001$

**Table 5: Psychosocial disability as dependent variable: regressions**

| | | B | $R^2$ | $R^2$ change | F change |
|---|---|---|---|---|---|
| Block 1 | Pain intensity | .21* | .04 | .04 | 8.3* |
| Block 2 | Fear of negative evaluation (BFNE) | .41** | .20 | .16 | 36.8** |
| Block 3 | Acceptance of shame and embarrassment (ASES) | -.26* | .23 | .03 | 7.3* |

| | | B | $R^2$ | $R^2$ change | F change |
|---|---|---|---|---|---|
| Block 1 | Pain intensity | .28* | .08 | .08 | 12.7* |
| Block 2 | Pain-related fear (PASS) | .27* | | | |
| | Acceptance of Pain (CPAQ) | -.25* | .28 | .20 | 20.7** |
| Block 3 | Acceptance of shame and embarrassment (ASES) | -.23* | .32 | .04 | 8.01* |

| | | β | $R^2$ | $R^2$ change | F change |
|---|---|---|---|---|---|
| Block 1 | Pain intensity | .19 | .03 | .03 | 5.6 |
| Block 2 | General Acceptance (AAQ-II) | -.51** | .27 | .24 | 53.0** |
| Block 3 | Acceptance of shame and embarrassment (ASES) | -.15 | .28 | .01 | 2.6 |

* $P < .01$, ** $P < .001$

**Table 6: Depression as dependent variable: regressions**

| | | β | $R^2$ | $R^2$ change | F change |
|---|---|---|---|---|---|
| Block 1 | Pain intensity | .31** | .10 | .10 | 17.0** |
| Block 2 | Intensity of embarrassment (BFNE) | .44** | .28 | .18 | 40.6** |
| Block 3 | Acceptance of shame and embarrassment (ASES) | -.33* | .33 | .05 | 11.1* |

| | | β | $R^2$ | $R^2$ change | F change |
|---|---|---|---|---|---|
| Block 1 | Pain intensity | .39** | .15 | .15 | 22.8** |
| Block 2 | Pain-related fear (PASS) | .20 | | | |
| | Acceptance of Pain (CPAQ) | -.28* | .33 | .18 | 16.4** |
| Block 3 | Acceptance of shame and embarrassment (ASES) | -.35** | .42 | .09 | 19.1** |

| | | β | $R^2$ | $R^2$ change | F change |
|---|---|---|---|---|---|
| Block 1 | Pain intensity | .29* | .08 | .08 | 12.4* |
| Block 2 | General Acceptance (AAQ-II) | -.60** | .42 | .34 | 79.5** |
| Block 3 | Acceptance of shame and embarrassment (ASES) | -.15 | .43 | .01 | 2.7 |

* $P < .01$, ** $P < .001$