Revising the Self-Harm Antipathy Scale: validation among staff in psychiatric healthcare in Sweden

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ABSTRACT

Background: The Self-Harm Antipathy Scale (SHAS) is a questionnaire designed to measure nurses’ attitudes towards self-harm. This can be useful to improve the quality of care provided to individuals who self-harm.

Aim: The purpose of this study was to revise and adapt the SHAS for use in Sweden and evaluate the psychometric properties of this Swedish version (Self-Harm Antipathy Scale – Swedish Revised; SHAS-SR).

Methods: A sample of 596 employees within psychiatric healthcare was recruited (from a total of 3507, response rate 17.0%), the majority encountering self-harming individuals regularly at work. Participants completed the SHAS-SR questionnaire along with a scale assessing community attitudes towards individuals with mental illness (New CAMI-S). The sample was randomly split in half (n = 298 each). Exploratory factor analysis was performed on one subsample and confirmatory on the other. Confirmatory factor analysis on the original SHAS model, and convergent validity testing against New CAMI-S, used the whole sample.

Results: The final version of the SHAS-SR included 17 items forming three factors. Convergent validity was established ($r = -0.57$, $\rho = -0.48$, $p < 0.001$). The SHAS-SR and all its subscales demonstrated acceptable internal consistency ($\alpha = 0.73$–0.79, $\omega = 0.78$–0.79).

Conclusion: This study indicates that the SHAS-SR is reliable and valid when assessing attitudes towards self-harm among a sample of Swedish psychiatric healthcare staff. The scale could be useful for assessing the impact of attitude interventions to improve healthcare services. It may, however, have limited applicability for staff not working in caring roles.

Introduction

The prevalence of self-harm is high among individuals treated in psychiatric healthcare. One study reports that almost 50% of the individuals who were in contact with psychiatric healthcare in Sweden had self-harmed within the last 6 months, and the percentage was higher in the youth psychiatric section [1]. Furthermore, self-harm does not only occur in people with serious mental illness [2], but in individuals with no symptoms of mental illness, as well [3].

In Sweden, mental healthcare for individuals with self-harm has evolved substantially over the last decades. Evidence-based treatments have been implemented in outpatient care [4,5]. Self-harm has largely turned into a treatable symptom among others.

A national initiative, the Swedish National Self-Injury Project [6], has launched quality standards for self-harm care based on the recommendations of the National Institute for Health and Care Excellence (NICE) in the United Kingdom. In the first quality statement of the standards in the UK and Sweden alike, healthcare staff are recommended to treat individuals who self-harm with compassion, respect and dignity [4,7]. In order to meet this quality standard, the Swedish National Self-Injury Project has launched several training programs on approach and attitudes towards individuals who self-harm, for clinicians in various healthcare settings [6]. Furthermore, a patient organisation called Self-Harm and Eating Disorder Organisation (SHEDO), was founded in 2008. SHEDO has become a strong lobby organisation working to increase public knowledge on self-harm and eating disorders, collaborating with regional healthcare providers and providing support to individuals, loved ones as well as professionals seeking help or knowledge [8].

These developments are likely to have had substantial impact upon attitudes towards self-harm among Swedish healthcare professionals. In previous research, the concept of ‘attitude’ has been described as consisting of cognitive, affective and behavioural components, including beliefs, emotional responses and actions or intentions to act [9,10]. In this study, attitudes towards self-harm are considered to encompass beliefs about self-harm and self-harming...
individuals, as well as emotional and behavioural response tendencies when confronted with self-harm.

Unfortunately, reports indicate that globally, individuals who self-harm often experience negative attitudes from healthcare staff [11–13]. These attitudes do not appear to be influenced by profession or years of experience within the profession, but care providers who have been educated specifically about self-harm appear to experience less antipathy and are able to be more caring as compared to those who have not [14–18]. Importantly, being faced with negative attitudes from care providers can evoke negative emotional responses in self-harming individuals and discourage help-seeking [19,20], making it crucial to target such attitudes among healthcare staff. In a recent interview study, self-harming individuals described it as essential to experience positive attitudes from staff during admission [21]. The issue of care providers’ attitudes towards self-harm has only been examined sparsely in Sweden in the last decade [12].

The Self-Harm Antipathy Scale (SHAS) was developed by Patterson et al. in order to measure attitudes towards self-harm among nurses. Higher scores on this scale indicate higher levels of antipathy, i.e. negative attitudes, towards self-harm. The SHAS was developed and tested for validity and reliability in the UK, resulting in a 30-item scale of six factors with acceptable validity and good internal consistency (α = 0.89) [22,23]. The measure has been used successfully to distinguish between positive and negative attitudes to self-harm among nurses, and to obtain meaningful correlations with these attitudinal differences, such as education/qualification and experience with self-harm [22,24] as well as specific education about self-harm [18]. The SHAS has been adapted and validated in Korea (SHAS-K) [25] and in Japan (SHAS-J) [26]. Thus far, no equivalent measure has been established for use in a Swedish linguistic and cultural context.

The purpose of this study was to revise and adapt the SHAS for use in the present-day Swedish healthcare settings, evaluating the psychometric properties of the Swedish, revised version (SHAS-SR) among a sample of Swedish psychiatric healthcare staff.

Materials and methods

Measures

Questionnaires used in this paper included demographic questions, the Swedish version of the Self-Harm Antipathy Scale (SHAS-SR) and the New CAMI-S questionnaire.

The SHAS [22] is a 30-item questionnaire designed to measure nurse’s attitudes towards self-harm. Each item is rated on a seven-point Likert scale from ‘strongly agree’ to ‘strongly disagree’. 13 items are negative attitude statements, and strongly agreeing with these generates the highest score, just as strongly disagreeing with positive items does. Hence, a higher score on the total scale indicates more negative attitudes. In the original validation study, 23 of the items were associated with six factors, labelled ‘Competence Appraisal’, ‘Care Futility’, ‘Client Intent Manipulation’, ‘Acceptance and Understanding’, ‘Rights and Responsibilities’ and ‘Needs Function’. The Cronbach’s alpha value reported for internal consistency was 0.89 for the entire scale; the values for each factor ranged between 0.52 and 0.81.

For this study, written permission to use the SHAS was obtained from Whittington, the second author of the original SHAS validation study, as Patterson had retired. A Swedish version of the scale (SHAS-SR) was created, using forward-translation by co-author SW, and subsequent backward-translation by co-author SPL. The two translations were compared and revised by co-author RL, who is Swedish-English bilingual. The revisions were discussed within the research team with regard to clarity and fidelity with the original measure, before arriving at the final version of the questionnaire used in this study.

The New CAMI-S [27] is the new Swedish version of the Community Attitudes towards the Mentally Ill (CAMI) questionnaire, consisting of 20 items translated from the original questionnaire and nine items measuring behavioural intention, adapted from the Fear and Behavioural Intentions towards the mentally ill (FABI) questionnaire. Each item is rated on a six-point Likert scale from ‘totally disagree’ to ‘totally agree’. Eleven statements are negatively worded; once these are reversed, higher scores on the total scale indicate more positive attitudes. Since in psychiatric care, self-harming behaviour is associated with mental illness and often stigmatised [11], the researchers hypothesised that attitudes towards individuals with mental illness would positively correlate with attitudes towards self-harm among healthcare staff. We therefore chose to use New CAMI-S as an instrument to evaluate convergent validity. Furthermore, in a recent article, a community sample got to rate attitudes towards a hypothetical case of a self-harming individual, where one of the subscales reflected perceptions of the individual as dangerous [28]. Several attitude statements in the New CAMI-S revolve around the notion that individuals with mental illness are dangerous. This strengthens the hypothesis of a positive correlation between attitudes, i.e. a negative correlation between the SHAS-SR and the New CAMI-S.

Participants

The study sample included 596 psychiatric healthcare workers. A variety of professions were represented, including nurses, physicians, psychologists, nurse’s aides, social workers, researchers and administrative staff. Four-fifths (80.2%) had graduated post-secondary education. About half of the participants (48.3%) worked mainly within outpatient care, whereas 37.4% worked mainly within inpatient care; the remaining reported working in both (6.5%) or neither (4.7%) of the aforementioned, with information missing for 3.0%. Most participants (44.0%) had worked for ten years or less within the field of psychiatry. 31.5% had received training in self-harm. Most participants encountered self-harming individuals every week (39.8%) or more frequently (21.2%); only 5.9% indicated that they never encountered self-harming individuals at work.

The study population encompassed all members of staff hired within Psychiatry Skane, the public psychiatric
healthcare within the southmost county of Sweden. At the
time of data collection, this meant that the questionnaire
was sent to 4676 e-mail addresses, retrieved from the staff
register; however, only 3507 of them worked during that
period and had the chance to participate. This puts the
response rate at 17.0%.

When compiling information about the study population,
46 individuals had multiple registrations, making the popula-
tion data slightly skewed with these extra cases inseparable
from the unique individuals. Since this comprised only about
1.3% of the population, the representativeness of the sample
could still be inferred. The sample was tolerably representa-
tive of the study population, with the exception that individ-
uals with post-secondary education were overrepresented in
the sample. For a summary of participant and population
characteristics, see Table 1.

Data collection

After receiving ethical approval for this study by the regional
ethical review board at Lund University (Reg. No. 2017/774,
revised 2018/332), an e-mail was sent out to all members of
staff employed at Psychiatry Skane. The e-mail explained the
purpose of the study, participants’ rights, and that consent
to participation was given by clicking a link directing to a
web-based battery of questionnaires, including all those
listed above. The e-mail also contained an attachment with
standardised information to participants. All participants
were asked to complete all questionnaires included.

Additionally, all heads of the psychiatry units were offered
an in-person visit from a member of the research team, to
inform about the study and offer employees a chance to complete the paper version of the questionnaire. All units received this request via e-mail once. Hoping to attain a
larger sample size, though constricted by limited resources, a
second e-mail was sent to the inpatient units working with
Brief Admission, reminding them of this possibility. The units accepting this request were visited in person by researchers SPL or RL during the months of May to July 2018. In these cases, information was provided verbally, and paper versions of consent forms and questionnaires were distributed. In
total, 14 participants handed in their responses using the paper forms.

Missing values

Missing values were analysed using the Missing Value
Analysis function in the SPSS Statistics program (IBM,
Armonk, NY). All 30 items had some amount of missing data.
Although the missing values in total amounted to only 3.1%,
it affected 177 participants, i.e. 29.7% of the sample. The
missing value pattern matrix appeared to have a random
spread, although Little’s MCAR test turned out to be signifi-
cant, so the values could not be said to be missing com-
pletely at random (MCAR). Given a large sample size and
data missing at random (MAR), the expectation-maximisation
method was used to impute values [29–31].

Statistical analyses

Construct validity

Construct validity was evaluated running factor analyses on
the questionnaire data. Both exploratory and confirmatory
factor analyses are commonly used when validating a trans-
lated, adapted instrument [32]. Exploratory factor analysis
(EFA) does not require the declaration of an expected factor
structure, in contrast to confirmatory factor analysis (CFA),
which is theory-driven [33]. Both methods were deemed
appropriate in this study, setting out to revise the SHAS for
applicability in present-day Swedish healthcare settings (for
further details, see the Discussion section). CFAs were con-
ducted both on the model directly derived from the data in
this study (henceforth referred to as ‘the EFA model’) and on
Patterson’s original model [23] (henceforth referred to as ‘the
six-factor model’).

The CFA might turn out biased if performed on the same
data as the EFA. To avoid this when testing the EFA model,
the sample of 596 participants was therefore split in random
halves [34], into either an exploratory or confirmatory analysis
pool. This generated participant groups of n = 298 each. As
this was done post data collection, this procedure had no
impact upon conditions of participation. All other analyses,

### Table 1. Participant and population characteristics.

| Variable                        | Sample  | Study population* |
|--------------------------------|---------|-------------------|
|                                | n       | %                 | n       | %                 |
| Gender (3)                     |         |                   |         |                   |
| Woman                          | 440     | 73.8              | 2589    | 72.9              |
| Man                            | 150     | 25.2              | 964     | 27.1              |
| Other                          | 3       | 0.5               | –       | –                 |
| Age (3)                        |         |                   |         |                   |
| <30                             | 67      | 11.2              | 536     | 15.1              |
| 31–50                          | 279     | 46.8              | 1594    | 44.9              |
| ≥51                            | 247     | 41.4              | 1423    | 40.1              |
| Post-secondary education (11)  |         |                   |         |                   |
| No                             | 107     | 18.0              | 1424    | 40.1              |
| Yes                            | 478     | 80.2              | 2087    | 57.8              |
| Main area of work (18)         |         |                   |         |                   |
| Outpatient                     | 288     | 48.3              | 1605    | 45.2              |
| Inpatient                      | 223     | 37.4              | 1488    | 41.9              |
| Both of the above              | 39      | 6.5               | 131     | 3.7               |
| Neither of the above           | 28      | 4.7               | 329     | 9.3               |
| Work location (9)              |         |                   |         |                   |
| Helsingborg                    | 92      | 15.4              | 616     | 17.3              |
| Kristianstad                   | 90      | 15.1              | 600     | 16.9              |
| Lund                           | 171     | 28.7              | 787     | 22.2              |
| Malmo                          | 221     | 37.1              | 1235    | 34.8              |
| Other                          | 13      | 2.2               | 315     | 9.3               |
| Work experience: years within psychiatry (7) |         |                   |         |                   |
| <10                            | 262     | 44.0              | –       | –                 |
| 11–20                          | 154     | 25.8              | –       | –                 |
| 21–30                          | 63      | 10.9              | –       | –                 |
| 31–40                          | 78      | 13.1              | –       | –                 |
| ≥41                            | 30      | 5.0               | –       | –                 |
| Self-harm training (8)         |         |                   |         |                   |
| No                             | 400     | 67.1              | –       | –                 |
| Yes                            | 188     | 31.9              | –       | –                 |
| Work encounters with individuals who self-harm (7) |         |                   |         |                   |
| Never                          | 35      | 5.9               | –       | –                 |
| A few times per month          | 191     | 32.0              | –       | –                 |
| Every week                     | 237     | 39.8              | –       | –                 |
| Daily                          | 91      | 15.3              | –       | –                 |
| Several times per day          | 35      | 5.9               | –       | –                 |

*These numbers are slightly distorted, as some individuals have multiple registrations. Dashes indicate that no information was retrievable.
including the CFA based on the six-factor model, were done on the full sample.

To verify the adequacy of the sample size, the Kaiser–Meyer–Olkin (KMO) test was carried out. Bartlett’s test for sphericity was conducted to determine whether the correlations were sufficient for factor extraction.

The EFA was conducted using the SPSS software program, version 25.0. The principal component analysis method was used for factor extraction. As for factor rotation, it has been argued that it is not of great importance whether the factors correlate or not in EFA; therefore, an orthogonal rotation method can be used for facilitated understanding and interpretation [35]. Given that this prompted Patterson to use the orthogonal method of varimax for factor rotation [23], varimax rotation was carried out for the EFA of this study. Factors with an Eigenvalue equal to or greater than 1.0, explaining at least 5% of the total variance, were retained. Items with factor loadings of less than 0.40 were suppressed.

Following the EFA, confirmatory factor analyses were carried out using maximum likelihood estimation in the EQS 6 Structural Equations Program. As $\chi^2$ is not an appropriate fit index under non-normality nor for large samples [36], it was complemented by the Satorra–Bentler scaled $\chi^2$ (SB $\chi^2$) along with the comparative fit index (CFI), normed fit index (NFI) and root mean square error of approximation (RMSEA). The SB $\chi^2$ to degrees of freedom ratio should be no more than 3:1 for an acceptable fit [37]. Acceptable standards for the other indices are CFI $\geq$ 0.90, NFI $\geq$ 0.90 and RMSEA $\leq$ 0.08 [38].

CFAs were run separately for the EFA model and the six-factor model. The models were adjusted based on the CFA results. Items were removed if their factor loadings were less than 0.40, and/or if the Lagrange Multiplier test indicated that the model fit would improve if a given item was removed. After model adjustment, the analyses were re-run. The results of the two models were compared.

Finally, convergent validity was assessed making comparisons with the New CAMI-S instrument. The correlation between the SHAS-SR and the New CAMI-S was evaluated using two-tailed Pearson’s and ditto Spearman’s correlation. The latter was included as a complimentary measure since the data was not presumed to be normally distributed, making Pearson’s measure less robust [39], and also given that Likert scale data is technically ordinal rather than interval, making Spearman’s the measure of choice [40,41]. These analyses were performed on the EFA model and the six-factor model separately, and results were compared.

### Internal consistency reliability

Internal consistency was assessed using Cronbach’s alpha for the whole scales as well as for each factor of each scale, computed in SPSS. This was complemented by McDonald’s omega, as this test is more accurate when tau-equivalence, assumed for Cronbach’s alpha, is not upheld [42].

McDonald’s omega was computed using the MBESS package of R, version 3.5.1. These analyses were performed on both the EFA model and the six-factor model, and results were compared.

### Results

#### Item analysis

An item analysis was carried out on all 30 items of the scale. The mean item scores ranged between 1.31 and 6.11, with standard deviation (SD) between 0.95 and 2.08. The item-total correlations ranged between 0.02 and 0.63 (Table 2).

For further details, see Table 2.

#### Factor analysis

The KMO test yielded a score of 0.89 for the 298 participants and 30 items, well above the cut-off of 0.60 for sample size adequacy [43,44]. Bartlett’s test gave a significant result of $\chi^2 = 5869.91 (p < 0.001)$, indicating that a factor analysis could be done [45].

Seven factors came out with an Eigenvalue equal to or greater than 1.0. Three were retained as they each explained more than 5% of the variance. Applying the varimax rotation specified for three factors, 27 out of 30 items loaded above 0.40 onto them and were retained for further analysis. When an item loaded on more than one factor, its grouping was based primarily on which appeared to be most logical, and secondarily on which had the strongest loading, as was done in the original factor analysis [23]. There were two such cases in this analysis. Item 22 (‘I feel critical towards self-harming clients’) loaded onto factors 1 and 2 by 0.41 and 0.46, respectively, and logic as well as loading magnitude suggested it be placed in the latter. Item 18 (‘Self-harming

| Item number | Item mean | Item SD | Corrected item-total correlation |
|-------------|-----------|---------|----------------------------------|
| 1           | 2.44      | 1.53    | 0.46                             |
| 2           | 6.11      | 1.39    | 0.02                             |
| 3           | 2.86      | 1.94    | 0.35                             |
| 4           | 2.05      | 1.52    | 0.49                             |
| 5           | 1.80      | 1.21    | 0.55                             |
| 6           | 1.79      | 1.16    | 0.46                             |
| 7           | 1.31      | 0.95    | 0.42                             |
| 8           | 3.99      | 2.08    | 0.21                             |
| 9           | 1.69      | 1.34    | 0.35                             |
| 10          | 1.55      | 1.34    | 0.34                             |
| 11          | 1.38      | 0.97    | 0.28                             |
| 12          | 2.85      | 1.76    | 0.38                             |
| 13          | 1.52      | 1.13    | 0.42                             |
| 14          | 2.47      | 1.47    | 0.33                             |
| 15          | 1.93      | 1.22    | 0.52                             |
| 16          | 1.56      | 1.24    | 0.39                             |
| 17          | 1.84      | 1.31    | 0.43                             |
| 18          | 1.98      | 1.37    | 0.51                             |
| 19          | 1.54      | 1.16    | 0.59                             |
| 20          | 1.77      | 1.17    | 0.61                             |
| 21          | 2.36      | 1.57    | 0.41                             |
| 22          | 1.95      | 1.35    | 0.48                             |
| 23          | 1.87      | 1.19    | 0.63                             |
| 24          | 2.00      | 1.24    | 0.55                             |
| 25          | 2.24      | 1.55    | 0.05                             |
| 26          | 2.13      | 1.45    | 0.58                             |
| 27          | 3.11      | 1.81    | 0.63                             |
| 28          | 3.44      | 1.50    | 0.48                             |
| 29          | 1.87      | 1.43    | 0.32                             |
| 30          | 2.55      | 1.50    | 0.50                             |

SD: standard deviation.
The total variance explained by the three factors was 39.8%. Factor 1 explained 25.7% of the variance and contained nine items. Factor 2, explaining 7.4% of the variance and contained eleven items. Factor 3, explaining 6.7% of the variance, contained seven items.

A CFA was run on the above factor structure model. The results at first were poor, $\chi^2(351) = 3602.29$, SB $\chi^2(321) = 919.79$, $p < 0.001$, CFI = 0.82, NFI = 0.75, RMSEA = 0.06, 90% CI [0.05, 0.06]. Four items were removed as their factor loadings were less than 0.40. Furthermore, the Lagrange Multiplier test indicated that six additional items ought to be removed for model improvement. A second CFA on the remaining 17 items showed acceptable results apart from the NFI, $\chi^2(136) = 1781.87$, SB $\chi^2(116) = 214.22$, $p < 0.001$, CFI = 0.94, NFI = 0.88, RMSEA = 0.04, 90% CI [0.03, 0.05].

The factor loadings for these 17 items are displayed in Table 3.

The factor loadings for the confirmatory factor analysis based on the EFA model (SHAS-SR-17) are presented in Table 4. At this stage, the three factors were inspected for content and named: 'Sympathy and Dedication', 'Judgement' and 'Acceptance and Understanding', respectively.

A CFA was also run on the six-factor model of the original SHAS, i.e. with 23 items loading on six factors [23]. At first, the results were poor, $\chi^2(253) = 2756.64$, SB $\chi^2(215) = 491.51$, $p < 0.001$, CFI = 0.89, NFI = 0.82, RMSEA = 0.05, 90% CI [0.03, 0.05].

| Item | Factor I | Factor II | Factor III |
|------|----------|-----------|------------|
| 24. I help self-harming clients feel positive about themselves* | 0.80 | | |
| 23. I demonstrate warmth and understanding to self-harming clients in my care* | 0.76 | | |
| 30. I am highly supportive to clients who self-harm* | 0.74 | | |
| 20. I listen fully to self-harming clients’ problems and experiences* | 0.71 | | |
| 26. I acknowledge self-harming clients’ qualities* | 0.68 | | |
| 27. I find it rewarding to care for self-harming clients* | 0.65 | | |
| 21. I feel concern for the self-harming client* | 0.51 | | |
| 5. When individuals self-harm, it is often to manipulate carers | 0.74 | 0.78 | |
| 15. A self-harming client is a person who is only trying to get attention | 0.72 | 0.73 | |
| 6. People who self-harm are typically trying to get even with someone | 0.66 | 0.64 | |
| 9. Self-harm is a serious moral wrongdoing | 0.53 | 0.47 | |
| 7. A self-harming client is a complete waste of time | 0.53 | 0.43 | |
| 4. Self-harming clients do not respond to care | 0.52 | 0.42 | |
| 22. I feel critical towards self-harming clients | 0.46 | 0.70 | |
| 11. People who self-harm lack solid religious convictions | 0.45 | 0.67 | |
| 16. Self-harming clients have only themselves to blame for their situation | 0.44 | 0.58 | |
| 13. Acts of self-harm are a form of communication to their situation | 0.50 | 0.53 | |
| 3. A rational person can self-harm* | 0.46 | 0.51 | |
| 2. People should be allowed to self-harm in a safe environment | 0.26 | | |

*Statements have been reverse scored. Items below cut-off are in bold type.
When removing this item as well, the results were similar, and from the fact that there was only one item in factor five, loadings for the remaining 19 items are displayed in Table 5.

### Table 5. Item factor loadings for the confirmatory factor analysis based on the six-factor model (SHAS-SR-19)**.

| Item | Factor I | Factor II | Factor III | Factor IV | Factor V |
|------|----------|-----------|------------|-----------|----------|
| 21. I feel concern for the self-harming client* | 0.87 | | | | |
| 22. I can really help self-harming clients* | 0.85 | | | | |
| 23. I am highly supportive to clients who self-harm* | 0.77 | | | | |
| 24. I acknowledge self-harming clients’ qualities* | 0.77 | | | | |
| 25. I listen fully to self-harming clients’ problems and experiences* | 0.68 | | | | |
| 26. I demonstrate warmth and understanding to self-harming clients in my care* | 0.63 | | | | |
| 27. There is no way of reducing self-harm behaviours | | | | | 0.91 |
| 28. Self-harm is a serious moral wrongdoing | | | | | 0.91 |
| 29. Self-harming clients have only themselves to blame for their situation | | | | | 0.88 |
| 30. A self-harming client is a complete waste of time | | | | | 0.85 |
| 31. Self-harming clients do not respond to care | | | | | 0.81 |
| 32. People who self-harm are typically trying to get even with someone | | | | | |
| 33. People who self-harm are usually trying to get sympathy from others | | | | | 0.76 |
| 34. A self-harming client is a person who is only trying to get attention | | | | | 0.75 |
| 35. When individuals self-harm, it is often to manipulate carers | | | | | 0.69 |
| 36. For some individuals self-harm can be a way of relieving tension* | | | | | |
| 37. Self-harming clients have a great need for acceptance and understanding* | | | | | |
| 38. Self-harm may be a form of reassurance for the individual that they are really alive and human* | | | | | 0.78 |
| 39. Acts of self-harm are a form of communication to their situation* | | | | | 0.76 |
| *Statements that have been reverse scored. **The presented factor solution is based on the six-factor model of the original SHAS, but was trimmed down to a five-factor solution adjusting for the results of the first CFA. |

CI [0.04, 0.05]. Two items had loadings less than 0.40, and the Lagrange Multiplier test indicated that one other item ought to be removed. After removing these three items and re-running the analysis, the results were acceptable, $\chi^2(190) = 2291.84$, SB $\chi^2(155) = 339$, $p < 0.001$, CFI = 0.91, NFI = 0.85, RMSEA = 0.05, 90% CI [0.04, 0.05], apart from the NFI and from the fact that there was only one item in factor five. When removing this item as well, the results were similar, $\chi^2(171) = 2164.24$, SB $\chi^2(142) = 306$, $p < 0.001$, CFI = 0.92, NFI = 0.86, RMSEA = 0.04, 90% CI [0.04, 0.05]. The factor loadings for the remaining 19 items are displayed in Table 5.

The presented factor solution is based on the six-factor model of the original SHAS, but was trimmed down to a five-factor solution adjusting for the results of the first CFA.

### Table 6. Subscale and wholescale means, SDs and internal consistency for SHAS-SR-17.

| Scale level | Mean | SD | Cronbach’s $\alpha$ | McDonald’s $\Omega$ |
|-------------|------|----|----------------------|---------------------|
| Sympathy and Dedication | 11.24 | 5.30 | 0.79 | 0.78 |
| Judgement | 12.53 | 5.71 | 0.78 | 0.79 |
| Acceptance and Understanding | 10.67 | 4.92 | 0.73 | 0.78 |
| SHAS-SR-17 | 34.44 | 12.67 | 0.86 | 0.85 |

SD: standard deviation.

### Table 7. Subscale and wholescale means, SDs and internal consistency for SHAS-SR-19.

| Scale level | Mean | SD | Cronbach’s $\alpha$ | McDonald’s $\Omega$ |
|-------------|------|----|----------------------|---------------------|
| Competence Appraisal | 14.11 | 5.87 | 0.79 | 0.79 |
| Care Futility | 8.16 | 4.00 | 0.60 | 0.61 |
| Client Intent/Manipulation | 7.97 | 4.04 | 0.79 | 0.79 |
| Acceptance and Understanding | 3.82 | 2.32 | 0.66 | 0.66 |
| Needs Function | 5.32 | 2.71 | 0.57 | 0.59 |
| SHAS-SR-19 | 39.38 | 13.78 | 0.86 | 0.88 |

SD: standard deviation.

### Convergent validity

The correlation between the 17-item SHAS-SR and the New CAMI-S scale was assessed using Pearson’s $r$ ($r = -0.57$, $p < 0.001$) and Spearman’s rho ($r = -0.48$, $p < 0.001$). For SHAS-SR-19, the correlation coefficients were similar ($r = -0.55$, $p < 0.001$; $r = -0.47$, $p < 0.001$). There was a moderate to a strong, negative correlation between the two scales [46,47] regardless of which version of the SHAS-SR that was used, with high levels of antipathy towards self-harm associated with low positive attitudes towards mental illness. This indicates good convergent validity.

### Discussion

The purpose of this study was to bring forth a Swedish, revised version of the SHAS and evaluate its psychometric properties. The validity and reliability of the original SHAS, in English, was established on a sample of 153 persons, most of whom were nurses working within the field of psychiatry [22]. The sample of this study was larger and more diverse in...
terms of professions. As SHAS was originally developed for nurses, some questions may not seem relevant for other professions, which might have been reflected in the low participation rate in this study (17.0%). However, all participants worked within the field of psychiatry, and the majority in a care-providing role where they did encounter self-harming individuals. Hence, differences in participant characteristics from the original study were not believed to impact largely upon the construct validity of the SHAS-SR.

Establishing the SHAS-SR was done by adopting the logic of scale revision to bring forth and examine the revised scale structure, while also evaluating the already established model of the original version of the scale. The authors reasoned that the six-factor structure of the original SHAS was established over 15 years ago [23], in a context that likely differed culturally as well as with regard to healthcare availability and treatment practices for self-harming individuals [5]. This study aimed to not merely translate the scale but revise and adapt it for use in Swedish healthcare today. Therefore, an exploratory approach was deemed appropriate for the generation of a data-driven scale model. This approach has been used in the translation and adaptation of other versions of the SHAS [25,26]. However, a purely exploratory approach in the face of already established factor structure models could be criticised for neglecting relationships between theory and data [34], which is why confirmatory analyses were also carried out on the existing six-factor model, as well as on the EFA model. Implementing both a confirmatory and an exploratory approach has been done in other recent validation studies for translated instruments [48]. This combination of methods allowed for a more open exploration of the data, while also acknowledging existing theory.

Two different versions of the scale were rendered, which both showed acceptable construct validity and internal consistency overall. However, the version which was structurally more similar to the original six-factor SHAS, the SHAS-SR-19, turned out not to be acceptably reliable on the subscale level for the Care Futility, Acceptance and Understanding, and Needs Function subscales. Thus, the 17-item version, the SHAS-SR-17, was the one ultimately supported in this study. For this reason, the SHAS-SR-17 is simply referred to as the SHAS-SR henceforth.

The factor structure of the SHAS-SR turned out to differ from that of the SHAS, with 17 items loading on three factors. The Sympathy and Dedication factor was similar to the Competence Appraisal factor of the SHAS, but removing items 24, 28 and 30 (‘I help self-harming clients feel positive about themselves’, ‘I can really help self-harming clients’, and ‘I am highly supportive to clients who self-harm’, respectively) adding item 27 (‘I find it rewarding to care for self-harming clients’). This rendered it somewhat more positive and client-centred, conveying dedication to care on a more personal level. The changes also made the factor represent more of a sympathetic stance towards self-harming individuals rather than appraisal of one’s professional competence. The fact that the items which dealt more explicitly with competence appraisal were removed, might be explained by an influence of the Swedish cultural ideal of modesty and reluctance to make much of one’s competence [49], perhaps making participants prone to score humbly on these items no matter if they have positive or negative attitudes towards self-harming individuals.

The Judgement factor contained the statements from the Client Intent Manipulation factor of the SHAS combined with three Care Futility items (item 7, 9 and 16, ‘Self-harming clients are a complete waste of time’, ‘Self-harm is a serious moral wrongdoing’ and ‘Self-harming clients have only themselves to blame for their situation’). The ideas about manipulation, that care would be a waste of time and the shaming and blaming of self-harming individuals conveys a strong sense of judgement and disregard towards self-harming individuals, and disengagement from care.

The Acceptance and Understanding factor combined items from the Needs Function and Acceptance and Understanding factors of the original instrument. Interestingly, in the original construction of the SHAS, the Needs Function subscale contained only two items and Patterson pointed out that it could arguably be dropped as it accounted for little variance. It was ultimately retained though, as it was still deemed conceptually meaningful [23]. In the SHAS-SR, this subscale is merged with Acceptance and Understanding. This makes intuitive sense; seeing the needs function of self-harm can reasonably add to the clinician’s understanding and acceptance of the individual and their situation. Notably, item 11 (‘People who self-harm lack solid religious convictions’) is not included in this SHAS-SR subscale. It makes sense that lacking religious convictions would not contribute to the understanding of an individual’s self-harm in a highly secularised culture [50]. Furthermore, the inclusion of item 13 (‘Self-harming individuals can learn new ways of coping’) adds more nuance and connotations of hope.

A notable difference between the SHAS and the SHAS-SR is that the items from the Rights and Responsibilities factor of the SHAS are not included in the SHAS-SR. It could be that participants might agree that individuals have the right to self-harm, without thinking that they should be allowed to do so in a safe environment (with the connotation that the healthcare system is obliged to provide this environment). In particular, participants might disagree with the latter if they experience that their workplace is under pressure with limited resources, or if they think of their own role as preventing self-harm behaviours; staff might be afraid of inadvertently reinforcing self-harm.

Furthermore, item 10 (‘There is no way of reducing self-harm behaviours’) and item 4 (‘Self-harming clients do not respond to care’) were not included in the Judgement factor of the SHAS-SR, even though it could have been expected as they were part of the Care Futility factor of the SHAS. This may be because these items tap into knowledge more so than opinion, and so even those who agree that self-harming individuals are manipulative and do not deserve care might disagree with these items. This may reflect an evolution of care for self-harming individuals over the last decades. Evidence-based therapy is now available [5], along with the
initiative of the Swedish National Self-Injury Project (2012–2018), aiming to improve health care for and the approach towards individuals with self-harm behaviour [6]. It is also possible that the participants (psychiatric staff most of whom held a post-secondary degree) might not want to rate these statements in a way that risked coming across as ignorant. The rating of these two items might also vary depending on whether the participant is in a caring professional role or not, how often they encounter self-harming individuals, and whether they have received self-harm training.

Looking at the overall differences and similarities between the SHAS-SR and the SHAS, it could be argued that the two scales are more similar than it first appears. Admittedly, the number of items included in the SHAS-SR is almost half of those in the SHAS, which is a significant difference. However, four of the SHAS factors are merged into two in the SHAS-SR, with enough items from each of the four that their essence is, relatively, retained. The groupings of items in the SHAS-SR are new in some ways, but they appear coherent and logically intuitive.

The range of item mean scores turned out to be somewhat lower for the SHAS-SR (1.31–3.44) as compared to the SHAS (1.69–3.91), indicating slightly more positive attitudes in this study. This might be due to overall progress in care for self-harming individuals, as previously mentioned.

In sum, the carefully composed, empirically grounded SHAS instrument was revised to fit the context of present-day Swedish psychiatric healthcare. This rendered the SHAS-SR, which has demonstrated acceptable validity and reliability in this paper. The SHAS-SR is potentially useful as a measurement tool when assessing attitudes and possibly the effectiveness of self-harm training programs. Its use in Swedish healthcare contexts is encouraged.

Limitations of this study include the low participation rate as well as that the SHAS-SR questionnaire data were not analysed against additional, previously established factor structure models (the SHAS-K and SHAS-J). Also, attitude scores ought to be interpreted with caution, and more research is needed throughout the country before statements can be made on attitudes of Swedish psychiatric staff towards self-harm.

The study is also limited in its scale revision approach. As the authors have argued in this paper, much of the analyses were guided by the assumption that the present-day context of psychiatric care in Sweden is different from the context within which the SHAS was established. Perhaps this research project ought to have attempted to reflect these developments in the inclusion of new items in the scale, striving for new scale development rather than translation, revision and validation based on one existing scale. Given the current procedure, important aspects of attitudes towards self-harm within healthcare in Sweden today might have been overlooked.

Furthermore, as previously mentioned, the heterogeneity of profession in the sample might skew results somewhat, as the SHAS-SR might not be of the same relevance to all professional roles. Methodologically it would have been ideal to be able to target nurses for this validation study, but ethically it was deemed inappropriate. That is, in the larger study encompassing this one, there was a concern that asking participants specifically about their profession might, in combination with other demographic questions, compromise their right to anonymity.

However, information was gathered on how often participants encountered self-harming individuals at work. It is reasonable to infer that participants who stated that they never had such encounters (n = 35) would not be in the role of providing care to self-harming individuals; hence, their inclusion could be regarded a study limitation. Notably, excluding said participants and re-running the factor analyses generated results similar to the reported findings, supporting the three-factor, 17-item scale structure. This is not surprising, as the portion of participants who never encountered self-harming individuals was such a small fraction of the sample. Thus, it is still possible that the SHAS-SR might be of limited applicability to staff not working in caring roles. For assessing attitudes of non-clinical staff, the Judgement and Acceptance and Understanding subscales may be used, but perhaps they ought to be complemented by other questions on behavioural intention. This could be an objective for future studies, given that negative attitudes among non-clinical staff could potentially come across to self-harming individuals seeking care, or might otherwise affect the care provision; settings providing care for self-harming individuals should arguably strive to ensure positive attitudes throughout the organisation.

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