Brief report: The self harm questionnaire: A new tool designed to improve identification of self harm in adolescents

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Abstract

The Self Harm Questionnaire (SHQ) aiming at identification of self-harm in adolescents has been developed and piloted in a sample of 12–17 year olds (n = 100). The adolescents were recruited from both in- and outpatient psychiatric services. Concurrent validity of the SHQ was evaluated by comparing the SHQ results with recorded self harm in the entire clinical records, while the predictive value of the SHQ was assessed by reviewing the clinical records for further episodes of self harm after three months. 71% of the young people endorsed self harm on the SHQ. While 3% showed a false negative result on the SHQ, 20% of the participants disclosed self harm on the SHQ, which was not recorded in their clinical records. At three months follow up there was no statistically significant difference in either sensitivity .95, 95% CI [.72, .1.0] vs. .74, 95% CI [.49, .90] or specificity .35, 95% CI [.25, .46] vs. .51, 95% CI [.39, .62] between the SHQ and the entire clinical record in predicting future episodes of self harm. The SHQ is an important addition to the clinical repertoire designed to improve identification of self harm.

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Self harm is a common and growing problem in adolescents (Ougrin, Tranah, Leigh, Taylor, & Asarnow, 2012). Self harm is a strong predictor of eventual death by suicide (Ougrin, Banarsee, Dunn-Toroosian, & Majeed, 2011), increasing the risk of eventual suicide up ten-fold (Hawton & Harriss, 2007). Despite recent advances in self harm assessment and management (Asarnow et al., 2011; Huey et al., 2004; Ougrin, Ng, & Low, 2008; Ougrin, Zundel, et al., 2012; Ougrin, Zundel, et al., 2011) many unanswered questions remain (Ougrin, 2011; Ougrin & Latif, 2011). Reliable identification of self harm and other mental health problems in adolescents is essential (Husky et al., 2011). Using available screening tools often presents significant methodological and practical difficulties (Horowitz, Ballard, & Pao, 2009). Some tools may not be designed to be administered within the timeframe of a routine clinical appointment (Nock, Holmberg, Photos, & Michel, 2007), many have not been validated in clinical samples and few cover the entire spectrum of the clinically relevant features that ultimately are needed to govern clinical decision making (Goldston, 2003).

In the absence of the true gold standard on-going clinical assessment over time, using multiple informants as well as a combination of self report and interview-based measures is widely used at present to identify self harm.

In search for a comprehensive, reliable and brief screening tool the Self Harm Questionnaire (SHQ) has been developed. The SHQ aims to (a) identify self harm thoughts and behaviour in psychiatrically referred adolescents; (b) allow a detailed assessment of the most recent episode of self harm.

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The main goal of this study is to establish concurrent and predictive validity of the SHQ in relation to the entire clinical record.

**Method**

**The SHQ development**

Items were generated on the basis of self-harm assessment recommendations provided by the National Centre for Health and Clinical Excellence (NICE) Guidelines (NCCMH, 2004). The face validity of the items was established in broad consultation with two service users and their carers, child and adolescent mental health clinicians of a large hospital corporation (called South London and Maudsley NHS Foundation Trust) in London, UK, as well as three internationally renowned experts in the field of self harm from the UK (Oxford and King’s College London) and the US (Pittsburgh). The items of the questionnaire evolved over time until the range of self harm characteristics of clinical relevance were established and incorporated into the questionnaire. The item generation process continued until no further information related to functional characteristics of self harm was deemed relevant. The final version of the questionnaire consists of three screening questions enquiring about any past incidents of self harm behaviour or thinking. If the adolescent endorses previous self harm they are then presented with 12 further questions regarding the latest episode of self harm assessing its severity, function and consequences.

**Participants**

All the clinicians working with adolescents in South London and Maudsley NHS Foundation Trust were approached by email. Only those volunteering to participate were included in the study. All eligible adolescents and persons with parental responsibility were informed about the study in writing during one of their clinical sessions. Those volunteering to participate were approached by a researcher during one of their subsequent clinical sessions and the relevant consent/assent forms were signed. The SHQ was then administered to all the consenting young people on the clinicians’ caseloads provided the adolescents met the inclusion criteria as follows: (a) age: 12–17 years inclusive (b) having an allocated care coordinator. Exclusion criteria were: poor English, gross reality distortion due to psychosis or inebriation, severe risk of violence or suicide and known moderate to severe learning disability. The study was approved by the National Research Ethics Service Committee London-Harrow (reference number 09/H0709/37)

**Procedures**

Concurrent validity was tested by handing the SHQ to the participants and then comparing the SHQ results with the young persons’ entire clinical record. Predictive validity was tested by reviewing the participants’ clinical records regarding self-harm three months after the initial SHQ screening. The SHQ and the clinical records were compared in their ability to predict future episodes of self-harm. The presence of self-harm was ascertained by two MSc students who reviewed the records in their entirety. The quality assurance procedure is described below. Where young people indicated the presence of self-harm but clinical records contained no such information, the presence of self-harm was confirmed by the following procedure. The SHQ screening results were reviewed by the allocated care co-ordinator. The care co-ordinator then conducted further investigations, including a discussion with the young person and changed risk assessment recorded on electronic patient records if a history of self-harm was confirmed.

**Data analysis**

Self-harm characteristics measured by the SHQ were reported using descriptive statistics. In order to assess the reliability of self harm identification in the standard psychiatric assessment, a sub-section of the standard psychiatric assessment was independently rated by two raters and the inter-rater agreement (kappa) was calculated. The same procedure was applied in the evaluation of the reliability of the entire clinical record for self harm identification. Sensitivity and specificity were calculated using SPSS 15.0 for Windows. As the denominator of the majority of the calculations was 100, only the absolute numbers are presented below. Percentages are added where the denominator is different from 100.

**Results**

**Sample characteristics**

The sample comprised 100 participants (71 females). No adolescents were excluded due to severe risk for suicide. The ethnic make up was as follows: 42 White British, 11 of other White backgrounds, nine of dual heritage, 26 Black or Black British, and 12 of other ethnic backgrounds. 23 adolescents were in-patients, five attended a specialist (Eating Disorders) clinic and the rest were attending outpatient clinics. The average age of the participants was 15.10 years (SD = 1.69). Average initial Child Global Assessment Scale (CGAS) score recorded in 87 cases was 55.34 (SD = 12.63).
Self harm characteristics

Of the 100 participants tested 71 young people identified at least one episode of self harm (poisoning, cutting, burning, hitting themselves, hanging or drowning) on the SHQ. 20 (28%) reported a single episode of self harm, 20 (28%) reported two, three or four episodes and 31 (44%) five or more episodes. 74 young people reported having had thoughts of non-suicidal self harm, and 78 reported having suicidal thoughts. 54 (76%) young people stated that the index self harm episode was not planned, 28 (42%) reported they wished to die amongst other intended consequences and three (4%) listed death as the sole purpose of self harm. Suicidal self harm was associated with the history of suicidal ideation and the history of self poisoning. 15 (23%) indicated they had let someone know about their intention to self harm, most commonly a family member and and 31 (46%) informed someone after they had self harmed, also most frequently a member of their family.

Concurrent validity testing

The results of the SHQ screening (Table 1) were compared to the data of the entire electronic patient records. 20 participants indicated on the SHQ that they had self harmed while this information was not recoded in their entire clinical records. 8 (40%) of the 20 were male, average age was 14.75 (SD = 1.7), average initial CGAS score 56.1 (SD = 16.3). 8 (40%) of the 20 indicated a single episode of self harm, 6 (30%) indicated two - four episodes and the rest five or more episodes. Methods used were breaking their skin (58%), hitting themselves (16%), self poisoning (11%) and both breaking their skin and self poisoning (16%). None of the 20 young people indicated death as the sole motive for the self harm episode. 5 (25%) indicated death as one of the motives. All 20 young people’s clinical records were reviewed after three months.

Three participants indicated in the clinical records that they had self harmed but denied self harm on the SHQ.

Predictive value of the SHQ and the entire clinical record

Inter-rater reliability was calculated for the presence of self harm in the entire health records of the participants. 20 notes were randomly selected and were reviewed by two independent clinicians. Coefficient kappa was .78, 95% CI [.60, .96] indicating good agreement.

Of the 71 adolescents who indicated having self harmed on the SHQ 18 (25%) repeated self harm at least once in the three months following the screening. Of the 54 adolescents designated as self harm positive on the entire clinical record 14 (26%) repeated self harm at least once.

Of the 29 adolescents who denied self harm on the SHQ one adolescent (3%) self harmed at 3 months follow up Of the 46 adolescents designated as self harm negative on clinical records, 5 (11%) repeated self harm (Tables 2 and 3).

At three months follow up there was no statistically significant difference in either sensitivity .95, 95% CI [.72, 1.0] vs. .74, 95% CI [.49, .90] or specificity .35, 95% CI [.25, .46] vs. .51, 95% CI [.39, .62] between the SHQ and the entire clinical record in predicting future episodes of self harm.

Table 1
Concurrent validity testing: identification of self harm by the SHQ in relation to the entire clinical record.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Entire clinical record negative</th>
<th>Entire clinical record positive</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHQ Positive</td>
<td>20</td>
<td>51</td>
<td>71</td>
</tr>
<tr>
<td>SHQ Negative</td>
<td>26</td>
<td>3</td>
<td>29</td>
</tr>
<tr>
<td>Totals</td>
<td>46</td>
<td>54</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Estimated value</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower limit</td>
</tr>
<tr>
<td>Prevalence</td>
<td>.54</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>.94</td>
</tr>
<tr>
<td>Specificity</td>
<td>.57</td>
</tr>
<tr>
<td>For any particular test result, the probability that it will be:</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>.71</td>
</tr>
<tr>
<td>Negative</td>
<td>.29</td>
</tr>
<tr>
<td>For any particular positive test result, the probability that it is:</td>
<td></td>
</tr>
<tr>
<td>True Positive</td>
<td>.72</td>
</tr>
<tr>
<td>False Positive</td>
<td>.28</td>
</tr>
<tr>
<td>For any particular negative test result, the probability that it is:</td>
<td></td>
</tr>
<tr>
<td>True Negative</td>
<td>.90</td>
</tr>
<tr>
<td>False Negative</td>
<td>.10</td>
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</tbody>
</table>

Likelihood Ratios: [C] = conventional [W] = weighted by prevalence

<table>
<thead>
<tr>
<th>Likelihood Ratios</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive [C]</td>
<td>2.17</td>
</tr>
<tr>
<td>Negative [C]</td>
<td>.10</td>
</tr>
<tr>
<td>Positive [W]</td>
<td>2.55</td>
</tr>
<tr>
<td>Negative [W]</td>
<td>.12</td>
</tr>
</tbody>
</table>
**Discussion**

The results of this study call into question the reliability of self harm identification by a standard clinical interview. 20 “false positive” SHQ results, for which self harm was not recorded in the clinical records, were identified and analysed: in all 20 cases one (or more) episode(s) of self harm actually had occurred, which were not mentioned during clinical assessment. These “false positives” had a similar risk of self harm repetition as the “true positives”.

A limitation of this study involves the measures used to establish the concurrent validity of the SHQ. As there are no empirically validated measures of self harm the SHQ could not be compared with a formerly validated “gold standard” procedure, instead the “gold standard” of clinical records was chosen as it is routinely used by clinicians. Assessing the validity
of the SHQ with measures that do not themselves have established validity limits the validity of the findings. Secondly the external validity and generalisability of the results is not yet established. Since all of the participants in this study were clinically referred, the validity of the SHQ for a non-clinical population has still to be determined. A further limitation of the SHQ is that it consists of both quantitative and qualitative items and the scope for exploring its internal consistency is limited. This study of the SHQ is preliminary and the instrument may require further development before being standardised.

It is likely that the quality of record-keeping and indeed self harm identification varies in different health care services. Our findings may not apply to the clinics with sophisticated self harm identification procedures and our sample size was small. None-the less the fact that a significant proportion of the young people who had self harmed remained unidentified on the clinical records in the setting studied and using the recruitment method specified has to be noted. It may reflect that young people are reluctant to disclose self harm in initial interviews – stressing the importance of additional questionnaires for the evaluation of self harm. It also may indicate that clinicians sometimes decide to postpone exploring self harm till later, as they feel they cannot address this issue directly without an established therapeutic relationship.

Clinicians were not aware of the SHQ screening results until a researcher completed reviewing the existing clinical notes. It is possible, however, that the clinicians who volunteered to participate in the study paid greater attention to self harm identification in their patients thus inflating the observed associations between the SHQ and clinical records’ data.

Reliable identification of self harm is of great importance. Along with other researchers (Connor & Rueter, 2009) we conclude that using a combination of clinical interviews (with multiple informants), paper-and-pencil tools and comprehensive clinical records’ keeping afford the best chance of identifying adolescents who self harm.

Conclusion

Effective and standardised clinical screening is essential given the high rates of self harm identified in this sample and the known increased risk for suicide in those who self harm. Identification of self harming adolescents remains an important challenge. The SHQ has adequate psychometric characteristics in identifying self harm and predicting future self harm in relation to the currently used procedures. A combination of the on-going clinical assessment and a brief self report questionnaire is likely to be the optimal way of identifying self harm in those young people referred for psychiatric evaluation.

Acknowledgements

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Appendix A. Supplementary material

Supplementary data related to this article can be found at http://dx.doi.org/10.1016/j.adolescence.2012.09.006.

References


