The Kessler Psychological Distress Scale (K10)

BACKGROUND

The Kessler Psychological Distress Scale (K10) was first documented by Kessler and Mroczek, School of Survey Research Center of the Institute for Social Research, University of Michigan in 1994 and was developed for screening populations on psychological distress. The K10 has been used in a number of population health surveys in Australia, such as state-based CATI population surveys and the National Mental Health Survey conducted in 1997 by the Australian Bureau of Statistics.

The scale consists of 10 questions on non-specific psychological distress and is about the level of anxiety and depressive symptoms a person may have experienced in the most recent four-week period.

Development of the questions

In developing the K10, Kessler and Mroczek reviewed approximately 5000 initial items from various sources and reduced this to 45 items. In 1992, a USA mail survey was conducted that included 45 psychological distress items (n=1401). From these data, they reduced the items to 32. A telephone survey was conducted in 1993 using the 32 items (n=1574). From these data they were able to determine two sets of items (6 and 10 item) that represented the “entire range of high distress” and that were “highly discriminating along that continuum”.

Kessler 10-Item Questions

The K10 consists of 10 questions, which all have the same response categories.

1. Did you feel tired out for no good reasons?
2. Did you feel nervous?
3. Did you feel so nervous that nothing could calm you down?
4. Did you feel hopeless?
5. Did you feel restless or fidgety?
6. Did you feel so restless that you could not sit still?
7. Did you feel depressed?
8. Did you feel that everything was an effort?
9. Did you feel so sad that nothing could cheer you up?
10. Did you feel worthless?

The response categories for each of the 10-items are:
1. All of the time
2. Most of the time
3. Some of the time
4. A little of the time
5. None of the time

Questions 3 and 6 are not asked if the person answered ‘none of the time’ to the proceeding question.

SCORING OF THE KESSLER 10

There are two different documented scoring methods of the Kessler 10. Both of them are described below.

Clinical Research Unit for Anxiety and Depression Scoring

The values of the response categories are reversed: 5 - all of the time to 1 - none of the time. These 10 items are summed to give scores ranging from 10 and 50, where 50 indicates high risk of anxiety or depressive disorder. The Clinical Research Unit for Anxiety and Depression (CRUFAD), School of Psychiatry, University of NSW has developed cut-off scores for the Kessler 10:

Table 1: Cut-off scores K10 developed by CRUFAD to determine the prevalence of anxiety or depressive disorders

<table>
<thead>
<tr>
<th>K10 score</th>
<th>Level of anxiety or depressive disorder</th>
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<tbody>
<tr>
<td>10 to 15</td>
<td>Low or no risk</td>
</tr>
<tr>
<td>16 to 29</td>
<td>Medium risk</td>
</tr>
<tr>
<td>30 to 50</td>
<td>High risk</td>
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NSW Health Surveys Scoring

An alternative scoring method of the Kessler 10 has been used in the NSW 1997 and 1998 health surveys, conducted by the Epidemiology and Surveillance Branch, NSW Health Department. Similar to the previous method, the response categories are reversed ie value of 1 for “none of the time” to 5 for “all of the time”. These 10 items are summed to give scores ranging between 10 and 50 and are then converted to a ‘t-score’ by subtracting the mean of the score and dividing by the standard deviation of the score. These scores were then standardised with a mean of 50 and standard deviation of 10.

K10 standardised =
(K10 summed items - mean (K10 summed items))
Standard deviation (K10 summed items) x 10 - 50
Psychological distress was determined by taking one standard deviation above the mean minus 60.

**Results from a South Australian Survey**

In November 2000, a SERCIS population health survey assessing “Health and Well-Being” which included Kessler 10 was conducted in South Australia\(^5\). In all, 2454 adults (18 years and over) in South Australia were interviewed.

Using the CRUFAD scoring method, 2.2% (95% CI 1.7 - 2.8) of respondents in South Australia were determined to have a high risk of having anxiety or a depressive disorder.

**Table 2: South Australian prevalence of anxiety or depressive disorder according to the K10 (CRUFAD)**

<table>
<thead>
<tr>
<th>K10 score</th>
<th>Level of anxiety or depressive disorder</th>
<th>% (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 to 15</td>
<td>Low or no risk</td>
<td>69.0 (67.2 - 70.8)</td>
</tr>
<tr>
<td>16 to 29</td>
<td>Medium risk</td>
<td>28.7 (27.0 - 30.5)</td>
</tr>
<tr>
<td>30 to 50</td>
<td>High risk</td>
<td>2.2 (1.7 - 2.8)</td>
</tr>
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</table>

When analysed by regions (metropolitan Adelaide, rural SA and remote SA), no difference were found in the proportion of respondents with high risk of anxiety or a depressive disorder.

Using the scoring in the NSW Health Surveys, 12.8% (95% CI 11.5-14.2) of respondents reported having psychological distress. There was no difference in the proportion of respondents with psychological distress between the Metropolitan Adelaide and rural and remote South Australia.

**Validity and reliability**

Andrews and Slade\(^6\) have produced normative data on the K10 using the National Survey of Mental Health and Well-Being survey data conducted in 1997. They found the K10 to be comparable to the mental health instrument, GHQ, the quality of life instrument, SF-12, and current diagnosis of anxiety and affective disorders, and other mental disorder categories, or the presence of any current mental disorders, according to the mental health instrument CIDI.

Reliability tests were done on the K10 using the 2000 Collaborative Health and Wellbeing Survey\(^3\). The values of the kappa and weighted kappa scores ranged from 0.42 to 0.74 which indicates that K10 is a moderately reliable instrument.

**Summary**

The K10 is an appropriate screening tool for population health surveys. It is a simple, brief, valid and reliable instrument to detect mental health conditions in the population. However, additional research on the scoring and the clinical cut-off points to determine psychological distress is needed.

**REFERENCES**


**INFORMATION**

For further information about the results from the survey please visit the web site at: http://www.dh.sa.gov.au/pehs/cpse/sercis-publications.html or contact Eleonora Dal Grande on 08 8226 0789 or email eleonora.dalgrande@health.sa.gov.au

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