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Self-rated health as a measure of health status among people with chronic illness in an Urban area of South India

Raghuram V1, Narasimha Murthy NS2, Gopinath D2

Abstract:
Background: Rising burden of chronic illnesses across the globe necessitates the assessment of needs of persons suffering from these illnesses. Self-rated health has been found to be a valid and reliable tool in population health surveys. Material and methods: A cross-sectional study using modified cluster sampling technique was undertaken in the urban field practice area of M S Ramaiah Medical College, Bangalore. A semi-structured pre-tested questionnaire was used for data collection, which was done by interview method through house-house visits. Self-rated health was assessed using a 5-point scale ranging from Very Good–Good–Fair–Poor–Very poor. This rating was crosschecked by an assessment by the investigator. Descriptive statistics and factor analysis were used for the purpose of analysis of data and weighted kappa statistic was used to test agreement between self-rated health and health assessed by investigator. Results and Conclusions: Overall prevalence of chronic illness in the study population was 10.0% and significant difference was observed between males and females. In the study population, 72.0% (293) rated their health as fair. 13.0% rated their health as poor while the investigator assessed the health status of the study population as fair in 72.0% of the study population and as poor in 4.9% of the study population. Weighted Kappa statistic showed 33% agreement between the two ratings. Factor analysis of 32 variables included in the study explained 67% of the total variance. Principal component analysis of these factors yielded 12 factors of which 3 were considered major depending on the number of variables included and percentage variance explained by that factor. Major factor 1 contained 11 variables including self-rated health and explained 14.3% of the variance, which signifies the role of self-rated health as a measure of health status.

Introduction
The global prevalence of all the leading chronic diseases is increasing with the majority occurring in developing countries and projected to increase substantially over the next two decades. By the year 2020, 80% of the disease burden in the developing countries of the world is expected to come from chronic conditions.(1)

On a population basis, self-assessment of overall health provides a good indicator of actual health status and of use of health related services. Studies have shown that better the self-rated health fewer are the number of health problems, ambulatory and medical care visits and number of days of hospitalization in the previous year.(2) Self-rated health has been used in population health surveys because it can be easily applied and it has a high level of validity and reliability. Such assessment is a marker of inequalities among population subgroups, it shows high levels of predictive values of morbidity and mortality and it enables international comparisons to be made.(3,4) Individuals with a negative self-rated health had a relative risk of death almost two times higher than those who considered their health as excellent.(5)

Self-rated health is a subjective measure that combines physical and emotional aspects and one’s level of satisfaction with life. Individual perception of health is an important indicator per se, once individual levels of well-being can influence quality of life.(6) In this context is deemed essential to gain insight into the aspect of self-rated health among people with chronic illness in order to assess needs pertaining to provision of health services for these individuals.

Materials and Methods
A cross-sectional study using...
modified cluster sampling technique was undertaken in the urban field practice area of M S Ramaiah Medical College, Bangalore. A semi-structured pre-tested questionnaire was used for data collection, which was done by interview method through house-to-house visits. Self-rated health was assessed using a 5-point scale ranging from Very Good - Good - Fair - Poor - Very poor. This rating was cross-checked by an assessment by the investigator. Descriptive statistics were used for the purpose of analysis of data and weighted kappa statistic was used to test agreement between self-rated health and health assessed by investigator.

### Results

Overall prevalence of chronic illness in the study population was 10.0%. and it was more among females (12.3%) compared to males (7.8%). prevalence of chronic illness was maximum in the age group of >60 with 46.6% followed by 46-60 age group with a prevalence of 31.4%. Hypertension was the most common chronic illness in the study population with a prevalence of 24.5% (102) followed by Diabetes mellitus with a prevalence of 17.4% (73). Co morbidities were present in 30.6% cases (128). (Table 1)

In the study population, 72.0% (293) rated their health as fair. 13.0% rated their health as poor while the investigator assessed the health status of the study population as fair in 72.0% of the study population and as poor in 4.9% of the study population (Table 2). The difference between the two ratings was found to be very highly significant (p< 0.001). Weighted Kappa statistic showed 33% agreement between the two ratings (Weighted Kappa value-0.33). No significant difference was observed between males and females with respect to self-rated health (Table 3).

Factor analysis of 32 variables included in the study explained 67% of the total variance. After subjecting the abovementioned variables for factor analysis 12 factors were extracted using principal component analysis. Among the 12 factors, three were considered major depending on the number of variables included and percentage variance explained by that factor. Major factor 1 contained 11 variables including self-rated health and explained 14.3% of the variance, which signifies the role of self-rated health as a measure of health status among people with chronic illness (Table 4).

### Discussion

Self-rated health and measures of functional limitation are commonly used global indicators of morbidity. Self-rated health is frequently reported as an overall assessment of health status, such as excellent, good, fair, or poor, or other similar categories.

Self-rated health has been shown to be a valid indicator of health status, particularly among the elderly. Individuals with poor health ratings tend to have higher...
mortality, poorer physical functioning, and psychological distress compared to individuals rating their health as excellent or good.(7)

Ahmad Al-Windi in his study in a multi-ethnic Swedish health practice population found that 50% of subjects with chronic disease reported poor perceived health as compared to 26.3% non-diseased subjects.(8)

In a study to examine the relation between class, gender, and self-rated health in adults in Great Britain, using data from 2001 census it was found that there was notable gender differences in general self-rated health within each class.

Having any of nine of the following diseases or conditions was related to poor perceived health. They were heart failure, asthma, neurological disease, musculoskeletal and joint disorders, pain syndrome, psychiatric disorders, gastrointestinal and urinary tract troubles.(9)

Contrary to this in the present study, no significant gender differences were observed in general self-rated health.

In a cohort study of 783 elderly Dutch men conducted to study the value of self-rated health in predicting mortality and the incidence of chronic disease it was found that self-rated health was highly predictive of subsequent 5-year mortality from all causes. When adjusted for the presence of chronic diseases, age, medication use, BMI, systolic blood pressure, smoking, serum cholesterol, alcohol consumption, physical activity, education, marital status, and family history of chronic diseases, the relative risk for ‘moderately healthy’ or ‘not healthy’ men compared to ‘healthy’ men was 2.7. Self-rated health was an independent risk factor for cancer mortality (adjusted RR:4.2). It was found that Self-rated health affected fatality from chronic diseases rather than their onset.(10)

In The National Health Survey of Pakistan conducted between 1990 and 1994 overall 65.1%, respondents (51.3 % men vs. 77.2 % women) rated their health as poor/fair. A significant interaction was observed between sex and age (p < 0.0001). The interaction was due to the gender differences only in the ages 15–19 years, whereas poor/fair SRH at all older ages was more prevalent among women and increased at the same rate as it did among men. It was also found that province of dwelling, low or middle SES, literacy, rural dwelling and current tobacco use to be independently associated with poor/fair SRH.(11)

Studies conducted by Cornelius Debpuur, Paul Welaga, George Wak, and Abraham Hodgson in Ghana showed that 42% of the study subjects rated their overall health as poor, with slightly more women 45% than men 35% reporting poor health.(12)

Conclusion

The findings of the present study indicate that self-rated health can be a useful measure of

Table 4 - Distribution of self-rated health according to chronic illness (n=407)

<table>
<thead>
<tr>
<th>Chronic illness</th>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>8</td>
<td>60</td>
<td>34</td>
<td>102</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>18</td>
<td>41</td>
<td>14</td>
<td>73</td>
</tr>
<tr>
<td>Bronchial asthma</td>
<td>2</td>
<td>17</td>
<td>13</td>
<td>32</td>
</tr>
<tr>
<td>DM+HTN</td>
<td>10</td>
<td>13</td>
<td>17</td>
<td>40</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>0</td>
<td>9</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Musculoskeletal Conditions</td>
<td>1</td>
<td>5</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Gynaecological conditions</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Dermatological conditions</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Disorders of ear, nose and throat</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Other comorbidities</td>
<td>12</td>
<td>72</td>
<td>44</td>
<td>128</td>
</tr>
<tr>
<td>Depression</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>53</td>
<td>293</td>
<td>61</td>
<td>407</td>
</tr>
</tbody>
</table>

* excludes 10 children below 6 years

Table 5 - Factor 1 Socio demographic factors and chronic illness

<table>
<thead>
<tr>
<th>Variable</th>
<th>Factor loading</th>
<th>Communitary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>0.778</td>
<td>0.785</td>
</tr>
<tr>
<td>Education</td>
<td>-0.706</td>
<td>0.724</td>
</tr>
<tr>
<td>Occupation</td>
<td>-0.655</td>
<td>0.774</td>
</tr>
<tr>
<td>Self-rated health</td>
<td>-0.624</td>
<td>0.684</td>
</tr>
<tr>
<td>Health assessed by investigator</td>
<td>-0.605</td>
<td>0.712</td>
</tr>
<tr>
<td>Satisfaction with home care</td>
<td>-0.558</td>
<td>0.688</td>
</tr>
<tr>
<td>Duration of treatment in months</td>
<td>0.553</td>
<td>0.864</td>
</tr>
<tr>
<td>Duration of illness</td>
<td>0.532</td>
<td>0.895</td>
</tr>
<tr>
<td>Assistive devices</td>
<td>0.484</td>
<td>0.532</td>
</tr>
<tr>
<td>Activities of daily living</td>
<td>-0.483</td>
<td>0.662</td>
</tr>
<tr>
<td>Informal caregiver</td>
<td>0.405</td>
<td>0.609</td>
</tr>
</tbody>
</table>
health status especially among people with chronic disease.

References


