Reliability and Validity of Elderly Access to Health Care in Iran Questionnaire

Jalal Saeidpour1, Mohammad Arab2*, Hasan Abolghasem Gorji3, Ali Akbari Sari4, Hasan Eftekhar Ardebili5, Sahnarz Nejat6

1PhD Student of Health Care Management, Department of Management and Health Economics, Faculty of Health, Tehran University of Medical Sciences, Tehran, Iran
2Professor of Department of Management and Health Economics, Faculty of Health, Tehran University of Medical Sciences, Tehran, Iran
3Assistant Professor of Health Care Management Iran University of Medical Sciences, Tehran, Iran
4Associate Professor, Department of Health Management and Economics, Faculty of Health, Tehran University of Medical Sciences, Tehran, Iran
5Professor of Health Promotion and Education, Faculty of Health, Tehran University of Medical Sciences, Tehran, Iran
6Associate Professor, Department of Health, Epidemiology and Biostatistics, Faculty of Health, Tehran University of Medical Sciences, Tehran, Iran

ABSTRACT

Introduction: checking the elderly situation as a cortical that are increasing day by day needs valid and reliable tools appropriate with each country. Goal: this article is a report of reliability and validity determining of a new self-reported tool and has Likert choices of yes/no that is designed in order to investigate the barriers of elderly access to Health care in Iran. Material and methodology: in this combination study (quantity and quality) using the ideas of 19 elderly and expert people and by Lawshe criterion and formula 1975 the content validity ratio (CVR), content validity index (CVI), transparency and the wording of each question and total recall of questionnaire were determined, by distributing questionnaire among 41 elderly the reliability and by performing it again among them reliability over time was calculated. Findings: questionnaire content validity index (CVI) is 0.801; total recall of questionnaire is 0.79 in experts’ idea. Internal reliability of questionnaire is 0.702 and during the time is 0.805 (P value < 0.5). Discussion and conclusion: considering obtained studies and results, presented questionnaire can be a reliable and valid tool for checking elderly access to health care in Iran.

Keywords Equity in Access; Access to Health Care; the Elderly; Iran.

INTRODUCTION

Medical care averagely increases life expectancy for 5 years and if efficient and effective activities are done more potential will be for increasing life expectancy (1). Equal access to health care is identified as primary and necessary right of all humans in different countries (2). This right in World Conference of Alma Ata, Kazakhstan 1978 is recognized and its importance is emphasized (3). So health care systems try to act with the goal of access to the primary need (2) therefor justice and equality in accessing to qualified health care can have many effects on the level of public health.

Among this elderly and the phenomenon of aging-more than 65 people that have the highest population growth rate in the world compared to other groups (4) and it is estimated that their number get one billion and two hundred million till 2025 (5 & 6) is one of the most important social and economic challenges in front of policymakers and service providers of health section in most of the countries especially developing one (7). Elderly compared to young people have less ability for facing diseases and they are exposing different diseases moreover, they are widely changed in terms of spiritual and mental and by increasing age different kinds of depression and isolation will be appear in them (8) so they get about 60% of health care expenses and 35% of medical evacuations and 47% of inpatient days in hospitals (5). While in several cases this part of society doesn’t access to health care services and as result they don’t have good and qualified life (4, 7).

Iran is not exception too and different studies have shown that access (fair) of people especially elderly to health care doesn’t have good situation in different cities in Iran (4, 8, 9) in a way that in a research Tehran residents’ access to health care was 80% and the rest of people have been deprived from health care services (10). Among these inhibiting factors prevents from equal health care and provide a situation for injustice in accessing to health care. Based on this recognition and awareness about the rate of elderly access to
health care and identifying effective factors on it, will be more important. On the other hand there are a lot of researches related to elderly society in Iran and other countries and most of them are done on elderly as one-dimensional of checking public health, chronic diseases and life quality. But no researches have been done about accessing to health care in elderly society and following that there aren’t suitable tools for evaluating elderly accessing to health care in country. The goal of this article is reporting a part of study that is related to elderly accessing to health care, we are going to introduce a reliable and valid questionnaire for checking effective factors on elderly accessing to health care.

METHODOLOGY AND MATERIAL

This document is written due to reporting the way of having reliable and valid researcher-made questionnaire in order to check elderly accessing to Health care services in Iran. In quantity dimension of this research, questionnaire is designed and given to technology specialists to get their ideas about the need for transparency and proper wording of questions and comprehensiveness questionnaire. In quality dimension of this research, also experts’ suggestions about each question and the whole of questionnaire were collected and applied in questionnaire. Used method is explained below completely.

First we investigated Persian and English articles with comprehensive review and the relevant material to elderly access to health care in different countries were extracted. These findings were combined with the results of done interviews with elders and experts related to Iranian elders and primary questionnaire was written (the details of that will be presented in another article). In primary questionnaire considering researcher’s enough studies and awareness and taking advantage of university professors, questions and their answers considering elders’ conditions and health system of Iran were designed. After questions checking and setting them 52 questions were listed.

For checking 1- content validity ratio of questionnaire and content validity index 2- the transparency of questioning 3- wording each question suitably 4- the whole comprehensiveness of questionnaire, all experts mentioned in table 1 were surveyed.

<table>
<thead>
<tr>
<th>No.</th>
<th>Specialty</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>University professors/academic in the field of aging</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>Methodologist (epidemiologist)</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Hospital Manager</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Hospital nurses and elders' nurses</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>General practitioner</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Social workers of health sites in the city</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Elders</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>19</td>
</tr>
</tbody>
</table>

In order to quantitate the rate of experts’ agreement, Lawshe formula 1975 was used (Formula 1). According to this when the number of positive answers and the number of participants are in a way that the rate of agreement score is higher than a certain extent (this depends on the number of participants), shows the least agreement of 50% of respondent about a subject. For example considering that the number of participant experts in present study is 19 so the least score must be 0.42 (11).

**Formula 1**

\[
\text{Agreement score} = \frac{\text{Number of positive responses}}{\text{Total number of participants}}
\]

**First phase: removing unnecessary questions and calculating CVI**

In first phase experts were asked about the necessity of each question. “According to plan’s goal, is it necessary that mentioned questionnaire to be applied in questionnaire? 3: it is necessary. 2: suitable but not necessary. 1: it is not necessary “. After collecting experts’ ideas, the agreement score about the necessity of each question in questionnaire (CVR) was calculated. At determining the agreement “question necessity”, just the number of answers “completely necessary” in formula 1 are considered as positive answers.

Considering CVR score and researchers’ ideas, we decided about remaining or removing each question (appendix 1). Then content validity index (CVI) also was calculated as mean score of CVR of left questions in questionnaire (11)(formula 2).

**Formula 2**
Content Validity Index (CVI) = the sum of CVR scores of left question divided by the total number of left questions

Second phase: transparency and suitable wording of each question and whole questionnaire comprehensiveness

In second phase experts were asked about transparency and suitable wording of left questions and whole questionnaire comprehensiveness.

- Experts were asked about transparency and the lack of ambiguity of each question: is considered question transparent and without ambiguity? 1. Absolutely vague 2. Relatively vague 3. Relatively clear 4. Absolutely clear
- Experts were asked about suitable wording of each question “is the question worded in a best way and brief phrases? 1. Inappropriate 2. Relatively appropriate 3. Appropriate 4. Absolutely appropriate” experts were also asked to apply their ideas in case.
- For questionnaire comprehensiveness checking this question was applied at the end of questionnaire: “do you think questionnaire is comprehensive and cover everything? 1. Quite imperfect 2. Relatively perfect 3. Relatively comprehensive 4. Absolutely comprehensive”

In order to calculate experts’ agreement about these three factors formula 1 and its criterion were used. At determining agreement score for each question transparency answers (absolutely transparent and relatively transparent), At determining agreement score for each question suitable wording the number of answers (absolutely suitable and suitable) At determining agreement score for questionnaire total comprehensiveness the number of answers (absolutely comprehensive and relatively comprehensive) are applied as positive answers (appendix 1). The number of participants has been always 19.

For checking internal reliability, Cronbach’s alpha was used, in order to this, designed questionnaire were distributed among 41 elderlies in Tehran. In order to reliability checking during the time of questionnaire, test-retest was used. So after 3 weeks that questionnaire was distributed among that 41 people again and data were collected. After completion data were entered into SPSS v20 software and for determining internal reliability the rate of Cronbach’s alpha was calculated in two levels separately questionnaire for each area and for reliability during time elderlies’ answers correlation was calculated.

**FINDINGS**

The contents and recall of the questionnaire, transparency and proper wording of the question

Considering Lawshe criterion and also formula 1, the least score of CVR for each question was 0.16 and the maximum 1. The least score of CVR of questions were entered to next phase was 0.58 (higher than 0.42). Based on this in final questionnaire 39 questions were left (from 52 questions) and 13 questions were removed, but based on final studies and ideas of researchers 5 questions were removed, considering wanted changes from experts and elderlies were returned to final questionnaire again (appendix 1) and final questionnaire had 44 questionnaire as primary one. In order to determine CVI of questionnaire, the mean of CVR of left questions was considered that is calculated as 0.801.

Considering obtained data from experts and elderlies agreement about questionnaire total comprehensiveness, since it was the idea of 17 people from experts on absolute and relative comprehensiveness, comprehensiveness score of questionnaire was obtained as 0.79.

The results of transparency score of questions was also in 0.16 to 0.89. Only two questions didn’t achieve enough score (upper than 0.42) for remaining in questionnaire, but by applying wanted changes from researchers and experts were applied again in questionnaire. In this phase one question because of overlapping with another question and one question because of failure to comply with study were removed. And questionnaire had 42 questions. In next level the results of questions wording score also was in 0.47 to 0.89. So considering criterion 0.42, experts agreed with suitable wording of each question.

At the moment of all these surveys from experts, some questions in order to more transparency and creating more suitable wording were converted to two questions, based on this the first six questions were converted to two questions and therefor 42 questions of primary questionnaire were converted to 48 questions (appendix 2). Also many other detailed changes in sentences and options and questions area were named by experts that all were applied in questionnaire.

**QUESTIONNAIRE RELIABILITY**

The results of internal reliability by separating each area and whole of questionnaire are presented in table 2. The area of physical access showed the highest (0.759) and economic-financial area showed the lowest internal reliability (0.70). The whole internal reliability of questionnaire was calculated as 0.702.

**Table 2: the results of internal reliability of questionnaire separately**

<table>
<thead>
<tr>
<th>Area</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical access</td>
<td>0.759</td>
</tr>
<tr>
<td>Socio-culture</td>
<td>0.705</td>
</tr>
<tr>
<td>Economic-Financial</td>
<td>0.70</td>
</tr>
<tr>
<td>Common</td>
<td>0.703</td>
</tr>
<tr>
<td>Total questionnaire</td>
<td>0.702</td>
</tr>
</tbody>
</table>
The correlation between elderlies answers after 3 weeks was obtained equal 0.805 (P value <0.5).

CONCLUSION

The main goal of this article is presenting a reliable and valid tool for evaluating the rate of elderlies’ access to health care in Iran based on their personal features. This article considers 5 effective factors including barriers to physical access, social and cultural barriers, economic barriers, and financial barriers, barriers of three areas and characteristics of individual enablers for the barriers of elderlies’ access except demographic characteristics.

After initial development of the questionnaire, researchers’ first action in order to preparing that for using in natural environment and achieving accurate data, is determining content validity, because this phase is considered as one of the important and crucial levels of designing and developing questionnaire and shows that selected questions for questionnaire development measures questionnaire’s areas completely (12,13). On the other hand considering these days quantitate experts’ judgments has higher priority than quality reports (14) in content reliability checking of present tools Lawshe formula and reported criteria by him is used; in a way that at least 50% of people agree with question in questionnaire and shows that the existence of mentioned question is necessary and important with accepted level of confidence (P value <0.5) (11).

The role of content index as a tool for making decision about removing, remaining and moving each question (15) help researcher to step toward more standardization, the validity of all this questionnaire questions were suitable with index CVR and past studies (11). But considering the need of reporting CVI in designing tools (15),this index is calculated and reported. According to studies the rate of 0.8 and higher than that shows that this questionnaire is suitable (14) and is calculated 0.801 for questionnaire.

In order to develop more reliable and valid questionnaire, using different people in universities, methodologists, the people in practical area (hospitals) and studied society (here elderlies more than 60) were emphasized in checking tools content validity (14) and in this research this is considered. People are selected in three areas: 1. People working in the health care delivery system 2. Academic and methodologist environments, the studied society that includes people upper than 60

Researcher’s attempt in using and collecting experts’ ideas in a qualitative way in transparency, suitable wording and questionnaire comprehensiveness caused to use Lawshe formula and his decision making criterion and always these criteria are considered standard and scientific. Also paying attention considered criteria are very important in questions entry or exit to the questionnaire as a tool for making decision and final decision is on researchers (16) in each level some removed questions are applied again in questionnaire with researchers’ ideas and necessary changes.

In order to internal reliability checking that is emphasized on materials’ overlapping or forming parts of questionnaire also Cronbach’s alpha was used. One of definitions that are presented for reliability by Aibl and Freesbi 1989 is “correlation among a collection of numbers and the other collection of scores in an equivalent test that is obtained as independent on a group of participant” (17). Internal reliability of questionnaire was obtained as 0.702. In the most of resources Nonali article is mentioned in relation to desired value for alpha coefficient. According to him for tool reliability, at least 0.7 values are needed for alpha coefficient (18).

Like the other tools, written questionnaire have some limitations too. These tools are designed considering social and cultural features of Islamic republic of Iran and it is recommended for using in other countries, the special conditions of that country is paid attention that shows the need to complementary researches there.

This study as a part of research study (number 8921532001) is done with financial support of Tehran University of Medical Sciences. Moreover a part of Jalal Saeed poor’s thesis is done by supporting Tehran University of Medical Sciences health faculty. There isn’t conflict of interest in this research.

Acknowledgement: the researchers thank all university professors, experts and elderlies who were patient and helped us in developing this questionnaire.

REFERENCES


