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## Validation of Qualitative Methodology Applied to a Multidimensional Instrument with an Open Question

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### Abstract

The Brazilian population has experienced an ageing process, thus characterizing an increase in the number of elderly people. Instruments have been developed in order to measure the quality of life of elderly individuals. Hence, a questionnaire consisting of various validated instruments and an open question was applied to a group of elderly citizens in the city of Botucatu, SP, Brazil. The analysis of the open question, assessed by qualitative methods, generated eleven categories concerning the elderly people's opinions as regards quality of life and a cluster analysis of such answers was carried out, producing three groups of elderly individuals. Therefore, this work aimed at validating the categories obtained by the open question with the closed questions of the instrument by means of associations and application of chi-square tests at a level of significance of 5%. It was observed that qualitative analysis identifies phenomena regardless of category saturation. The quantitative method, on the other hand, shows the power of each category in a set, that is, as a whole.

KEY WORDS: qualitative analysis, validation, cluster analysis.

### 1. Introduction

Brazil has experienced a population ageing process that is similar to that observed in developed countries. Such process is characterized by a proportional increase in the number of elderly persons in relation to the total population. Hence, Brazil has gradually ceased to be a young country, as it was referred to for a long time, and begun to witness the ageing of its population. This process has privileged females, who confirmedly live longer than males, and such alteration, related to age structure and gender, is denominated demographic transition.

The fact of surviving, at times for long periods, does not mean living well since people's participation in various activities is hindered. Autonomy loss frequently occurs, leading to limitation to quality of life. Therefore, there is an interest in the early detection of who is losing such autonomy and when that loss is taking place with the purpose to organize care and necessary preventive measures. As a result, designing instruments to evaluate aspects related to quality of life in old age as well as applying such instruments in the population are of great interest.

Thus, aiming at evaluating the quality of life of individuals at 60 years of age and over in the city of Botucatu, São Paulo state, an instrument consisting of and adapted from Flanagan's Quality of Life Scale<sup>1,2</sup>, the Individual Lifestyle Profile<sup>3-5</sup>, WHOQOL-100-World Health Organization Quality of Life Survey<sup>6-10</sup>, IPAQ questionnaire (International Physical Activity Questionnaire)<sup>11</sup> was applied in 2003 jointly with questions on reported morbidity, socio-demographic data and the open question: "What does quality of life mean to you?". The final instrument was composed of 172 variables and, after a pilot study, final adaptations were made to the questionnaire.

This instrument was applied in a population-based study comprising 365 elderly individuals in the city. In order to compose the group under study, a systematic random sample of households was designed in Botucatu, which included one fourth of the households in each of the city's urban census sector. All the residents in the sampled households were catalogued and, in a second phase, the residents aged sixty years old and over were randomly sampled within each census sector on basis of the family records that had been previously compiled. Their places of

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residence were visited by trained field researchers, and the individuals who were found in their households during up to four visits and agreed to participate in the investigation comprised the group under study.

As regards the open question "What does quality of life mean to you?", the obtained answers were analyzed and the meanings for quality of life expressed by the surveyed respondents could be checked. The analysis of answers consisted of three phases: pre-analysis, exploration of material and treatment of results, inferences and interpretation. Hence, from the analysis of answers, eleven categories were obtained: 1. preserving interpersonal relationships; 2. keeping good health; 3. maintaining healthy habits; 4. keeping mental balance; 5. accumulating material possessions during one's life; 6. leisure; 7. getting pleasure from work; 8. experiencing spirituality; 9. practicing rectitude and charity; 10. accessing knowledge; 11. living in a favorable milieu<sup>12</sup>. Additionally, the data were transformed into binary variables and submitted to cluster analysis, from which three groups of elderly persons were obtained: those who related quality of life to affective issues and family; those who valued pleasure and comfort and those who pursued their life ideals as priorities.

With these three groups and still using cluster analysis, further questions were added to the instrument. Such questions were subjectively selected and were the ones which best defined quality of life in old age.

As a result, it was found that the first group of elderly individuals, that is, those who defined affective issues and family as quality of life, included questions related to being happy about their health; their capacity to work, being satisfied about their capacity to learn in courses and develop manual skills, participating in leisure activities and being satisfied about their financial conditions. There were also elderly individuals who avoided eating sweets and reported being happy about their spouses as well as those who could have arguments without losing their temper; those who felt useful in their social milieu and those who participated in team sports activities and associations.

In the second group, formed by elderly persons who mostly valued pleasure and comfort, the following variables were included: doing some sort of voluntary work out of home; valuing material possessions; being satisfied about one's family milieu, children, brothers and sisters or relatives, place of residence and the comfort it provided and being aware of one's blood pressure and cholesterol levels.

In the third group, formed by the elderly individuals who established as priorities the fulfillment of their life ideals, were included the following variables: ingesting alcoholic drinks; having diabetes; setting aside time every day for relaxation listening to music, watching TV or other forms of entertainment; having lung diseases; not performing physical activities; making and keeping friends; smoking; balancing time between work and leisure; having cardiopathies and eating fruit and vegetables.

Based on these groups, the study aimed at validating the qualitative analysis of the open question by verifying the associations between the categories obtained in such analysis and the closed questions on the instrument. It also aimed at identifying if that which the elderly persons viewed as quality of life was coherent with what they experienced in their everyday lives.

## **2. Methodology**

The associations between the categories obtained from the qualitative analysis of the open question, which were transformed into binary variables, with the thirty questions previously selected according to the subjective criterion of reflecting the quality-of-life indicators found in the cluster analysis were obtained by using the chi-square test or Fisher's exact test when appropriate and taking into account a level of probability of 5%. All the analyses were performed by *SAS for windows*, v.8.02 .

## **3. Results and Discussion**

As regards category 1, that is, the elderly persons who mentioned preserving interpersonal relationships as quality of life, significant association was observed by the chi-square test with the following questionnaire variables: having leisure which included gatherings with friends, playing team sports, participating in associations, being active in one's community, feeling useful in one's social milieu, being happy about one's capacity of developing new manual skills, being able to learn in courses and lectures, participating in leisure activities, being able to work, being content about one's health and being happy in relation to one's capacity of performing everyday activities. There was no association of this first group of elderly persons with those who reported to be hypertensive, to be able to have an argument without losing one's temper, to be satisfied about intimate relationships, to have the habit of eating between meals, to avoid fatty food and to be dissatisfied as regards one's financial conditions.

These associations may suggest that those elderly persons sought interpersonal relationships in their social activities and by participating in gatherings and groups, that is, the elderly person seeks his quality of life in socialization. Considering that satisfaction about one's intimate relationships may be important for interpersonal relationships, a non-association with this variable was observed. This may be due to the fact that these older people do not highly value such condition, or it may be due to the fact that many are widowed and do not have a partner with whom to share this phase of life.

In Category 2, that is, the category including the elderly who mentioned keeping good health as quality of life, the following variables were associated: being active in one's community and feeling useful in one's social milieu; being happy about one's intimate relationship with one's spouse, boyfriend or partner; having the habit of eating between meals; being happy in relation to one's capacity of developing new manual skills; being happy about participating in leisure activities and in relation to the capacity of performing every day activities. Hence, it is possible to state that having good health enables the elderly person to perform various activities. Nevertheless, there was no association between being hypertensive; having leisure which included gatherings with friends; participating in team sports activities and associations; being able to have an argument without losing one's temper; avoiding eating fatty food; being happy about one's capacity of learning in courses, lectures or schools; being happy about one's financial conditions and one's capacity to work or health conditions.

Taking into account the variables that were not associated with this category, it is assumed that those stating that quality of life meant having good health were the ones who, in fact, were not found to be in such condition; therefore, they valued it even more highly. Hence, it was possible to observe that if they were healthy, they would generally participate in leisure and social activities more actively.

For category 3, that is, those who reported that having quality of life was related to having healthy habits, association was observed for the following: those who did some sort of voluntary work outside the home and those who were aware of their blood pressure and cholesterol level and tried to control them. There was no significant association with the following variables: being happy about one's family constitution, about one's relationship with children, brothers, sisters or relatives; being happy about one's place of residence and the comfort provided by one's house.

Thus, it was noticed that some of the elderly persons in this category sought healthy habits as a way to control blood pressure and cholesterol. Others believed that their places of residence and the comfort provided by their houses were essential for keeping healthy habits. In the latter case, since there was no significant association between these issues and the category taken into account, there was, in fact, an indication that these facts were important to the elderly, but they did not necessarily exhibit them.

As regards category 4, that is, the elderly individuals who replied that quality of life meant keeping mental balance, the variables that were significantly associated were: having arguments without losing one's temper even when one's wishes are objected to; being happy about one's intimate relationship with one's wife, boyfriend or partner; being satisfied about the capacity of developing new manual skills and learning from courses, lectures and in schools; being happy about one's participation in leisure activities and about one's financial conditions; feeling happy about one's capacity of working and performing everyday activities as well as about one's health conditions. There was no significant association with those reporting to be hypertensive; those whose leisure included gatherings with friends, team sports activities and participation in associations; those who were active in their communities and felt useful in their social milieu; who reported the habit of eating between meals and those who avoided fatty food.

Therefore, the elderly persons who referred to quality of life as having mental balance were the same who sought socialization activities that could increase their self-esteem and who showed to be understanding individuals. It is noteworthy that the variables that were not associated with this category seemed to be important for the accomplishment of good quality of life, such as leisure activities and participation in social gatherings. This non-significance may represent that, to them, mental balance is important; however, they do not have the opportunity to experience such condition.

In category 5, that is, those who answered that quality of life meant accumulating material possessions, there was an association between: feeling happy about one's relationship with children, brothers, sisters or relatives and being happy about one's comfort at home and one's place of residence. No association was found with those who reported to do voluntary work out of the house; those who were satisfied about their family constitution or those who were aware of their blood pressure and cholesterol levels and sought to control them. In this case, it is possible to assert that the variables which were not associated did not, in fact, contribute to the acquisition of material possessions. Again, it is observed that the elderly persons in this category valued material possessions because they did not own them and, contrarily, they felt satisfied simply by the relationships that they established.

In category 6, that is, those who stated that having good quality of life meant having leisure, no association was found between: doing voluntary work out of the house; being happy about one's family constitution; being happy about one's relationship with one's children, brothers, sisters or relatives; being happy about one's place of residence and the comfort one has at home or being aware about blood pressure and cholesterol levels and controlling them. In this case, it may be that the elderly person is not, in fact, happy about his place of residence and the comfort that it provides. Hence, he is unable to participate in leisure activities, which are essential in this phase of life.

For categories 7, 8, 9, 10 and 11, which comprised finding pleasure at work, experiencing spirituality, practicing rectitude and charity, accessing knowledge and experiencing favorable milieus, respectively, no association was found between: those who ingested some sort of alcoholic drinks; those who were diabetic; those who set aside time to relax; those who had the habit of listening to music, watching TV, going to the cinema, reading or other types of entertainment; those who had lung disorders; those who sought to make and cherish friends; those who did not smoke; those who balanced their time between work and leisure; those who had cardiopathies and those who consumed fruit and vegetables on a daily basis. It was observed that the analyzed questions were in no way related to the categories defined as above. Since such contexts present a rather subjective connotation, it is more difficult to evaluate them using an instrument which is not mainly targeted on these aspects of life. Additionally, these categories were less frequently observed in the elderly persons' answers. Hence, it is not surprising that there was virtually no significance for these categories in relation to the questions under consideration.

#### 4. Conclusions

In the present study, it is concluded that quantitative analysis identifies phenomena, regardless of the saturation of categories. On the other hand, the quantitative method shows the power of each category in a set, that is, as a whole. Therefore, the category obtained by qualitative analysis is only associated with the other closed questions on the instrument if the frequencies of answers are high, since the presence of the most frequent categories indicates a consistency of qualitative analysis. In this way, it was noted that it is possible to obtain more simplified instruments with a smaller number of questions in order to evaluate quality of life in old age, since many questions have little or no influence to assess quality of life in that phase of life.

It was also observed in this study that variables such as spirituality, rectitude and charity, knowledge and work are very subjective questions which are difficult to be evaluated by a multidimensional instrument. For such cases, more specific instruments must be designed.

Additionally, it was also observed that some elderly persons actively sought what they considered to be quality of life while others expressed that quality of life was exactly what was absent from their daily lives.

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