Identification of Items for Creating a Questionnaire for the Assessment of Instrumental Activities of Daily Living (IADL) in Elderly Patients

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Objective. To identify items to design a questionnaire to assess IADL in the elderly in the community.

Design. Delphi study.

Location. Community setting, primary health care.

Participants. Fifty seven multidisciplinary experts (family doctors, geriatricians, physiotherapists, social workers, male nurses) who are members of the Spanish Society of Family and Community Medicine or the Spanish Geriatrics and Gerontology Society.

Methods. Three consecutive questions sent via e-mail or fax. First: What items would you like to take into account in a questionnaire to assess IADL in the elderly? Second: out of the groupings select 10 you consider to be of special relevance? Third: among the 14 more selected items, score, by scoring from 1 to 10, the ones you consider more important? In the end we obtained the 10 items to include in the questionnaire according to their scores.

Results. Thirty experts answered the 3 mailings. The 53 initial proposals were grouped into 24 items. In the end we obtained the following selection (from higher to lower score): dealing with medication, use of the telephone, housework, handling money, walking outside the home, security measures and risk avoidance, shopping, dealing with doors and keys, transport use, and security measures and risk avoidance. The 53 initial proposals were grouped into 24 items and finally we selected the 10 items that should be included.

Conclusions. Only 2 items could have gender influence (in contrast to other questionnaires), as “shopping” does not refer only to the household ones and “housework” also includes activities carried out by males. The most important items are “dealing with medication” (due to the high prevalence of problems and clinical outcomes) and “the use of the telephone” (survival item).

Key words: Delphi study. Activities of daily living. Elderly people. Questionnaire.
Introduction

The evaluation of functionality is one of the most important points in the care of the elderly, for several reasons: an aid in clinical evaluation and follow up, allows the detection of degrees of functional loss in those where it is still possible to prevent or slow down the progression of the disability, makes it possible to select the elderly at risk to prevent their further deterioration and the development of adverse events, and helps in standardisation for investigational purposes.\(^1,2\)

There are 2 separate groups of functional evaluation scales depending on the functions being evaluated\(^3,4\):

- Basic activities of daily living (BADL), elemental, and necessary for the person to maintain independence in their more immediate surroundings, that is, the home (bath, toilet, getting dressed, mobility, continence, diet).
- Instrumental activities of daily living (IADL), more elaborate, necessary to be independent in the community and to be able to remain independent in it. These include: taking responsibility for medication, care of the home, prepare meals, use transport, do shopping, use of telephone, etc.

In primary care, where the majority of elderly people are independent and are in a good state of health, the evaluation of the IADL is where it has more general interest, while the evaluation of BADL is useful in certain patient subgroups (immobile, acute processes with sequelae, rehabilitation, etc).

In Spain, the Lawton and Brody Index, is the scale most employed to evaluate AIDL (Table 1),\(^5\) despite the fact that it has not been adapted or validated in our environment and that it could have other important problems, such as the influence of culture and gender (4 of the 8 items evaluate tasks traditionally assigned to women).

Owing to this lack of suitable tools in this area of geriatric evaluation, despite its relevance and interest, we set out to design and validate an instrument which would be applicable in primary care and, therefore, in the population in the community. For this initial phase a Delphi study was used,\(^6,7\) which is a design suitable for obtaining items which may add content validity to the questionnaire. Studies will follow to give it constructive and face validity, reliability and predictive and criteria validity.

The objective of the present study is to identify and select items for the design of a questionnaire to evaluate AIDL in the elderly who live in the community.

Participants and Methods

Design

Delphi type study, in a national setting, which was carried out between November 2003 and June 2004. Three consecutive mailings were sent out by e-mail or fax (for 3 people who were not prepared for this and would like to participate), at monthly intervals and with a reminder 15 days after each mailing. The responses were received by the same route.

In the first mailing they were asked to reply to the following question: “What items would you include in a questionnaire to evaluate AIDL in elderly people who live in the community?”; they were asked to indicate between 3 and 10 items which would cover different fields, and that they should try and avoid those which could have a clear gender bias.

After being grouped by the investigators, a second mailing of a list of the resulting items was sent, from which they should select the 10 items which they would consider most relevant.
Finally, in a third mailing, the list of the items most selected in the previous phase was attached so that they would score from 1 to 10, from lowest to highest relevance, the 10 which they would consider the most important.

Sample, Participants, and Context
Sample and context. The study setting was the community environment; it was directed at people 75 years who lived in the community, as from this age a higher prevalence of incapacity starts to appear, and it is that chosen in the majority of selective interventions in the elderly.

Participants. It was decided that the participants should be professionals from different levels, experts or with a wide experience in the care of the elderly, and ensuring that a significant proportion of them worked in primary care. All the family doctor authors of a recent manual of the Spanish Society of Community and Family Medicine (semFYC) were also asked to participate. Also, through the Secretary of the Spanish Geriatric and Gerontology Society (SEGG), professional members of this society were also asked if they would like to participate in the experiment. Initially 57 experts from different fields and disciplines were contacted: 25 family doctors, 15 geriatricians, 5 physiotherapists, 6 social workers, and 6 nurses. The formal recruitment was by means of an introductory letter explaining the study and the request for their collaboration was sent with the first mailing. Those who could not be located after 3 attempts to contact them were excluded.

Analysis
The responses received from the first mailing were grouped by similarity of content after discussion and consensus by the investigators. In the second mailing, all the grouped items were sent so that they could select the 10 which were most relevant. The 14 most voted items were selected, with a score of more than 10 (since the rest had very low scores), and were sent in a third mailing so that the 10 selected by each collaborator could be scored from 1 to 10, from least to most relevant, respectively. The items were treated generically at all times as the selection of the type of activity was of interest. In a later phase of the creation of the questionnaire (face validity) the technical aspects of the items were treated generically at all times as the selection of the key items to include in the final questionnaire (Table 1). The third mailing was sent to the 43 experts who answered in the first phase and which had a list attached of the 14 resulting items. On analysing the activity suggestions according to professional field, it was seen that the medical and geriatric experts valued the activities regarding the use of medication and transport; the nurses placed more value on the tasks of adapting to the environment and use of domestic appliances; the physiotherapists valued instrumental abilities, such as changing a light bulb, opening/closing doors or using keys; and the social workers valued the self-care and social relationships.

The second mailing, with the list of the 24 resulting items, was sent to the 43 experts who answered in the first phase, so they could select, in their opinion, the 10 most relevant. With the replies obtained, we selected the items which obtained a score of >10, resulting in 14 items (Table 2).

The third mailing was sent to the same people as before and which had a list attached of the 14 resulting items so that they could score the 10 which they considered most relevant (they scored from 1 to 10 points, from least to most relevance). Thirty experts who continued in the study replied and we obtained, ranked by score (a total of 1650 points, corresponding to the sum of the 10 scores of the 30 experts), the 10 key items to include in the final questionnaire (Table 3). Of the 30 professionals who concluded the study, 12 were family doctors (40.0%), 11 geriatricians (36.7%),

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th>Lawton and Brody Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Care of the Home</td>
<td>Use of Telephone</td>
</tr>
<tr>
<td>Care of home without help</td>
<td>1</td>
</tr>
<tr>
<td>Does everything, less the heavy work</td>
<td>1</td>
</tr>
<tr>
<td>Only light tasks</td>
<td>1</td>
</tr>
<tr>
<td>Needs help for all tasks</td>
<td>1</td>
</tr>
<tr>
<td>Incapable of doing anything</td>
<td>0</td>
</tr>
<tr>
<td>Washing clothes</td>
<td>1</td>
</tr>
<tr>
<td>Carried out personally</td>
<td>1</td>
</tr>
<tr>
<td>Only washes small items</td>
<td>1</td>
</tr>
<tr>
<td>Is incapable of doing the washing</td>
<td>0</td>
</tr>
<tr>
<td>Preparation of meals</td>
<td>Handling money</td>
</tr>
<tr>
<td>Plan, prepare and serve without help</td>
<td>1</td>
</tr>
<tr>
<td>Prepares if ingredients available</td>
<td>0</td>
</tr>
<tr>
<td>Prepares pre-cooked dishes</td>
<td>0</td>
</tr>
<tr>
<td>Has to be given prepared food</td>
<td>0</td>
</tr>
<tr>
<td>Going shopping</td>
<td>Responsible for their medication</td>
</tr>
<tr>
<td>Does it without any help</td>
<td>1</td>
</tr>
<tr>
<td>Only makes small purchases</td>
<td>0</td>
</tr>
<tr>
<td>Has to be accompanied</td>
<td>0</td>
</tr>
<tr>
<td>Is incapable of doing shopping</td>
<td>0</td>
</tr>
</tbody>
</table>

Results
Of the 57 experts who were sent the first questionnaire, 43 replied and 53 items were obtained, which were grouped into 24 activities. On analysing the activity suggestions according to professional field, it was seen that the medical and geriatric experts valued the activities regarding the use of medication and transport; the nurses placed more value on the tasks of adapting to the environment and use of domestic appliances; the physiotherapists valued instrumental abilities, such as changing a light bulb, opening/closing doors or using keys; and the social workers valued the self-care and social relationships.
A fundamental aspect of the study is to have relied on a multi-disciplinary team of experts who carry out clinical tasks, which has permitted the inclusion of specific instrumental or physical abilities (which do not normally appear in other scales of this type) and others which may be of greater practical importance.

This aspect is corroborated by the fact that, in the first responses sent back a relationship was observed between the type of items and the professional who graded it. The integration of all of them contributed to improving the validity and gives it a richer content.

The improvements achieved as regards the already available scale most employed for evaluating IADL (Lawton and Brody Index) are the decrease in the influence of gender and the widening of the type of activities represented in the items. Some of the items resulting from this new scale project are similar to the Lawton Index (items 1, 2, 3, 4, 7, and 9, shown in Table 3), although it minimises the

5 nurses (16.6%), 2 physiotherapists (6.7%), and no social workers.

The losses were 27: in the first phase 14 were lost, in the second 10 and in the third and last, 3.
importance of domestic tasks, which still remain in 2 of
the 10 future items of the new scale as opposed to 4 of the
8 existing in that of Lawton, to avoid gender bias. These
items, although present in both scales, in the new scale
they have attempted to orientate towards activities which
are normally carried out by both sexes, not limiting them
to those in which males normally obtain less points. It has
more of a bearing on other types of complex activities
which enable the person to adapt to his/her environment
and maintain their independence in the community.

Ten items were chosen because there was an appreciable
difference in points as regards the next ones, although sub-
sequent analysis in the process of creating and validating
the questionnaire will determine the number of definitive
items. Although the item of social relationship did not ap-
pear as instrumental as the rest, it reflects a level of global
functioning in a basic area to be able to maintain oneself
in the community.

An aspect which has to be pointed out as novel within the
methodology of this study, is the use of e-mail as a means
of communicating with the experts within the Delphi
study. This system has been rapid, convenient and with
great possibilities, and has not involved a lower number of
losses (47.4%) as compared to the more traditional me-
θod by letter post. 9

This study is a first pass in the creation and validation of a
future questionnaire, by providing the content validity. In
subsequent phases the face validity will be looked for and
the reliability, the validity of criteria, and concurrent and
predictive validity, will be analysed

The multidisciplinary and clinical character of the experts
has contributed to enhance the spread of activities evalua-
ted in the new questionnaire, as well as making it more
practical and useful in the day to day clinical practice in
primary care.

In this new questionnaire, only 2 items could have gender
influence (unlike in other questionnaires available), al-
though “to do the shopping” is not limited to domestic
purchases, and in the “domestic tasks” activities carried
out, traditionally, by men are also included. The items
most valued are the use of medication (of great importan-
tce due its high prevalence and impact) and use of the te-
lephone (considered an activity item of survival).

As for the advantages compared to the Lawton Index, a
reduction in gender bias and an increase in the range of
evaluated activities has been achieved.

As previously mentioned, the present study is a first
pass (content validity) in the creation and validation of
the questionnaire: other experts in questionnaires will
take part in the next phase (face validity). Later the re-
iliability of the questionnaire, as well as the criteria and
concurrent validity will be analysed along with other in-
dices.

Acknowledgments
To the experts who have taken part in the study, and to the 2
scientific societies which represent them: semFYC and SEGG.

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Reinventing a Scale to Evaluate Functional Independence in the Elderly

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Integral evaluation in the elderly is a multidimensional and multidisciplinary process centred on the detection of the underlying problems which can make the physiological process of ageing worse. The method used to diagnose dependency is functional evaluation, in the context of a geriatric evaluation, and is currently based on the evaluation of the capacity to perform, independently, the basic activities of daily living (BADL). It is common, in elderly people, that the first warning sign of an approaching and progressive deterioration can be a slight loss of functional independence. This impairment can be demonstrated in the social area as well in cognitive capacity, or with the appearance of a small limitation in mobility or another physical problem. Only if these risk factors are detected in their earlier stages can the health professionals carry out specific preventive and rehabilitation measures to the affected dimension, and it is in the diagnosis of this incipient fragility where the evaluation of the degree of independence is shown to be more useful with the person carrying out the instrumental activities of daily living (AIDL).¹

The independent performance of these activities has a significant impact on the health of the elderly. It has been associated with higher levels of self-perceived health and a direct association with mortality has also been shown. There is also other evidence that the lack of independence in carrying out AIDL can be associated with sensory problems, lack of physical exercise, falls, difficulties in mobility, the lack of leisure activities and, above all, poorer quality of life.

The American Academy of Family Physicians, in their recommendations of preventive activities in primary care, revised in August 2005, did not include the functional evaluation of the elderly. However, other consulted sources of similar fields, the US Preventive Services Task Force and the Canadian Task Force of the Periodic Health Exa-

Key Points

- In the healthy elderly of the community, the first warning sign of deterioration is a slight loss in their functional independence.
- It is recommended to carry out a periodic evaluation of the independence to carry out basic and instrumental activities of daily living in this population.
- There are different scales for evaluating the functional independence of the elderly, but the ones most used have not been validated in our cultural environment.
- The potential functional capacity is not recorded in the current questionnaires and it could be useful in some specific situations.
mination do recommend the periodic evaluation of the ABDL and the AIDL, although without quoting any particular scale or questionnaire.

The tool most used in our country to evaluate AIDL is the Lawton and Brody index. It scores if the individual performs the activity, not if he/she declares they can do it. It gives great importance to domestic tasks, therefore women normally obtain a better score. However, it evaluates the capacity to carry out an activity in circumstances of living alone, as in the case of widows/widowers.

The availability of electrical appliances and other tools could also influence the score. There have been many applications of this scale: it has been used as an indicator to determine the type and level of care necessary, to decide to admit to an institution, to evaluate intervention treatment, to train personnel, and plan and provide care services, as well as in research.

The Pfeffer-FAQ\(^2\) questionnaire is used as a cognitive screening test, although its format is that of a tool for activities of daily living for normal individuals or with slight functional changes. It measures the functional capacity to be able to carry out the AIDL. It has a high correlation with cognitive deterioration, as well as with the Lawton and Brody scale.

The Rapid Disability Rating Scale-2\(^3\) is another one of the AIDL used in clinical practice, although it is directed more towards the co-evaluation of the mental state. It can be used in institutionalised subjects as well as those in the community. It consists of 18 questions classified into 3 groups: an aid in the activities of daily living (8 items), degree of incapacity (7 items), and 3 questions on specific problems (mental confusion, cooperation, and depression). It has 4 response options, with a score range between 18 and 72 points. The authors obtained mean values of 21-22 in non-domiciliary residents in the community. It has been suggested that in moderate-acute states of cognitive deterioration it yields better results than other scales, such as Pfeffer-FAQ or that of Lawton and Brody scale.

The ABDL of the Katz Index, the 8 of the Lawton and Brody scale, and 2 added activities, due to the importance that some authors have attributed to them, which are going to the toilet and combing hair.\(^6\) It can also be useful to evaluate the potential functional activity with the question: “If you did not have help to carry out the task, could you do it yourself?,” with the hypothesis that sometimes the elderly do not carry out an activity, not because they cannot, but for convenience or too much protection by their carers.

Along this line, perhaps an adaptive approach, with a combination and a selection of different items, among those already available, to evaluate the AIDL in our environment in a more sensitive or specific manner would be a more efficient task than starting creating a new tool from zero, taking into account the extensive scientific evidence available on the subject. There are currently 8833 literature references indexed on Medline with the criteria “Geriatric Assessment[MeSH]” of which 30% also have the criteria "Activities of Daily Living[MeSH]". This percentage is lower (25.3%; 22/87) when the same strategy applies with the language filter in Spanish. This difference may support the hypothesis that the use of these scales is qualitatively different in our environment, which could be due to the majority of them have not having been adapted nor validated for use in our cultural environment. This, then, justifies the need to investigate the creation of new scales for evaluating AIDL, more suited to our primary care, and any attempt to advance this subject is followed with interest due to the expectations that it generates.

References

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