

# 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 you would 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 most selected items, select, 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 means of social contact.

**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.

## IDENTIFICACIÓN DE ÍTEMES PARA LA CREACIÓN DE UN CUESTIONARIO DE VALORACIÓN DE ACTIVIDADES INSTRUMENTALES DE LA VIDA DIARIA EN PERSONAS MAYORES

**Objetivo.** Seleccionar ítems para diseñar un cuestionario de valoración de las actividades instrumentales de la vida diaria (AIVD) en personas mayores residentes en la comunidad.

**Diseño.** Estudio Delphi.

**Emplazamiento.** Medio comunitario, atención primaria.

**Participantes.** Un total de 57 expertos multidisciplinarios (médicos de familia, geriatras, fisioterapeutas, trabajadores sociales, enfermeros) pertenecientes a la Sociedad Española de Medicina de Familia y Comunitaria (semFYC) o a la Sociedad Española de Geriátrica y Gerontología (SEGG).

**Métodos.** Se realizaron 3 envíos consecutivos por correo electrónico o fax. En el primer envío se interrogaba acerca de qué ítems incluirían en un cuestionario para valorar las AIVD en personas mayores; en el segundo se pedía que seleccionaran, de los ítems agrupados, los 10 que consideraran más relevantes, y un tercero se solicitaba que, de los 14 ítems más seleccionados, puntuaran de 1 a 10 los más trascendentes. Así pues, se obtuvieron ordenados por puntuación los 10 ítems que debían ser incluidos.

**Resultados.** A los 3 correos contestaron 30 expertos. Las 53 propuestas iniciales se agruparon en 24 ítems y finalmente se seleccionaron (de mayor a menor puntuación) los siguientes: utilización de los fármacos, uso del teléfono, tareas domésticas, utilización del dinero, deambulación fuera del domicilio, medidas de seguridad y evitación de riesgos, realización de compras, uso de puertas y llaves, uso del transporte y medios de relación social.

**Conclusiones.** Sólo 2 ítems podrían estar influidos por el sexo (en contraposición con otros cuestionarios disponibles), aunque «la realización de compras» no se limita a las domésticas y en «tareas domésticas» se incluyen actividades también realizadas por los varones. Los ítems más relevantes son «utilización de los fármacos» (importancia por prevalencia/repercusión clínica) y «empleo del teléfono» (ítem de subsistencia).

**Palabras clave:** Estudio Delphi. Actividades de la vida diaria. Personas mayores. Cuestionario.

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A commentary follow this article (pág. 318)

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## 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.<sup>1,2</sup>

There are 2 separate groups of functional evaluation scales depending on the functions being evaluated<sup>3,4</sup>:

– 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.

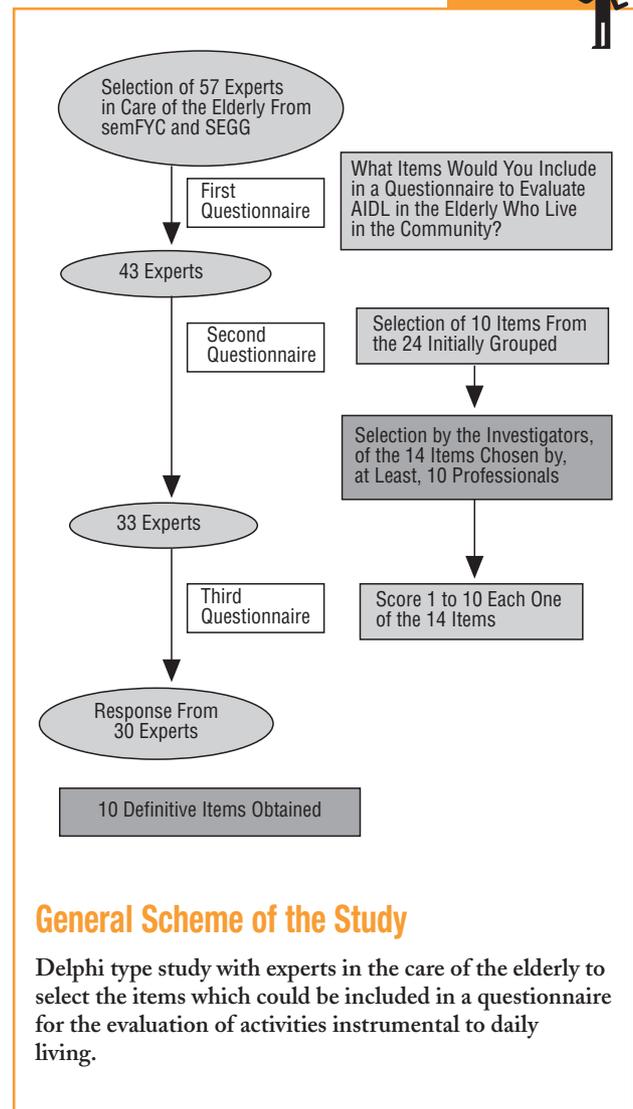
In primary care, where the majority of elderly people are independent and are in a good state of health, the evaluation of the IADL is where it has more general interest, while the evaluation of BADL is useful in certain patient subgroups (immobile, acute processes with sequelae, rehabilitation, etc).

In Spain, the Lawton and Brody Index, is the scale most employed to evaluate AIDL (Table 1),<sup>5</sup> 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,<sup>6,7</sup> 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.

## Material and methods



## 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)<sup>8</sup> 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 or the members of semFYC who refused the invitation to take part, 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 will be developed further. The analysis of these last responses provided the definitive selection.

**TABLE 1** Lawton and Brody Index

Care of the Home		Use of Telephone	
Care of home without help	1	Capable of using without problems	1
Does everything, less the heavy work	1	Only for very familiar places	1
Only light tasks	1	Can answer but cannot call	1
Needs help for all tasks	1	Incapable of using it	0
Incapable of doing anything	0	Use of transport	
Washing clothes		Travels in public transport or drives	1
Carried out personally	1	Only by taxi, not by bus	1
Only washes small items	1	Needs accompanying	0
Is incapable of doing the washing	0	Unable to use it	0
Preparation of meals		Handling money	
Plan, prepare and serve without help	1	Has accounts, goes to bank, etc	1
Prepares if ingredients available	0	Only uses simple accounts	1
Prepares pre-cooked dishes	0	Incapable of using money	0
Has to be given prepared food	0	Medication responsibility	
Going shopping		Responsible for their medication	1
Does it without any help	1	Has to be prepared	0
Only makes small purchases	0	Incapable of doing it alone	0
Has to be accompanied	0		
Is incapable of doing shopping	0		

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.

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%),

**Results**

Of the 57 experts who were sent the first questionnaire, 43 replied and 53 items were obtained, which were

**TABLE 2** Initially Grouped Items Proposed, Ranked According to the Number of Experts Who Selected Them Subsequently\*

Proposed Key Items	N
1. Use of medication†	32
2. Use of money and domestic budget†	32
3. Use of own telephone†	30
4. Use means of transport (own or public)†	29
5. Making purchases (food, gifts, etc)†	25
6. Carrying out domestic tasks (wash, prepare food, make the bed, wash clothes, set and clear the table, etc)†	24
7. Use of basic home appliances (microwave, TV, radio, etc)†	19
8. Open and close doors and use keys†	19
9. Communication with the environment (radio, TV, reading, etc)†	18
10. Walking outside the home†	17
11. Avoiding risks and security measures (on crossing the road, traffic lights, obstacles on the pavement, etc)†	15
12. Establishment of social relationship (pensioner's club, letters, visit family and friends, etc)†	14
13. Carrying out administrative procedures (identity card, local government bills, complaints, etc)†	11
14. Carrying out basic home repairs and manual abilities (change a light bulb, put the key in the lock, wind up clock/watch, stick and cut out things, etc)†	11
15. Remember messages and activities which have to done in the day	8
16. Carry out intellectual functions (read, write letters, etc)	7
17. Use lifts (elevators)	6
18. Manage different types of opening (bottles, taps, packages, etc)	6
19. Use of complex home appliances (vacuum cleaner, washing machine, etc)	3
20. Cut finger/toe nails	3
21. Use of automatic cash machines and electronic cards	2
22. Use of public telephone	1
23. Care of domestic animals and/or plants	1
24. Collect the mail	0

\*The 33 participants continued to reply had to choose 10 of the 24 items proposed.

†Items selected by the investigators for the second phase, from those proposed initially.

**TABLE 3** Definitive Key Items Selected for the Questionnaire With Percentages of the Total of 1650 Points Scored\*

Manage medication	16.1%
Use of telephone	14.6%
Domestic tasks	12.3%
Manage money	12.2%
Walk outside the home	9.6%
Safety measures and avoid risks	9.3%
Make purchases	8.5%
Manage doors and locks	6.1%
Use of transport	6.1%
Means of social relationships	5.3%

\*The 1650 points correspond to the scores from 1 to 10 of each one of the experts who replied.

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.

## Discussion

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 AIDL (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

Discussion  
Key points



### What Is Known About the Subject

- The need to have tools available to evaluate AIDL, due to the significance and importance of this area of evaluating and approaching geriatrics.
- The Lawton questionnaire is currently the scale most often used for the evaluation of AIDL in the primary care clinic.
- The Lawton scale has not been adapted to our country, and has a significant cultural and gender bias.

### What This Study Contributes

- Items for the creation of a new questionnaire for the evaluation of AIDL based on a multidisciplinary consensus. It will contribute to content validity contained in a future scale.
- Only 2 of the 10 items could be influenced by gender.
- E-mail is used as the communication route with the experts, without an impact on the response rate as compared to the classic Delphi study using letter post.

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 subsequent 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 appear 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. The most valued activities are the use of drugs, of great significance for its high prevalence and impact, and the use of the telephone, which was considered a “survival item” due to the benefits of its correct use.

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 method by letter post.<sup>9</sup>

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

## Conclusiones

The multidisciplinary and clinical character of the experts has contributed to enhance the spread of activities evaluated 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), although “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 importance due its high prevalence and impact) and use of the telephone (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 reliability of the questionnaire, as well as the criteria and concurrent validity will be analysed along with other indices.

## 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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## COMMENTARY

## 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).<sup>1</sup>

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 mo-

### 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.

bility, 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-

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<sup>2</sup> 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<sup>3</sup> 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, which are more sensitive in mild cases of deterioration.

The COOP-WONCA<sup>4</sup> charts evaluate the functional state and quality of life associated with health. It requires that the subject evaluates his/her state of health in the previous 15 days (physical, feelings, daily activities, social activities, changes in state of health, state of health, pain, and social support).

There are also other questionnaires on motor capacity, manual ability, self-care, scales for direct measurement of functional state, batteries of structured measurements of independence in daily activities and measurement of complex abilities, which provide more information on specific aspects in the evaluation of functional independence.<sup>5</sup>

A simple way of combining any of these tools could be the Functional Capacity Index of Sánchez Colodrón of 1997 (Faculty of Psychology, Autonomous University of Madrid), constructed by adding the 6 evaluation items of 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.<sup>6</sup> 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.

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