

Creating a coherent set of indicators to monitor health across Europe

The Euro-REVES 2 project

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The Euro-REVES 2 project, 'Setting up of a coherent set of health expectancies for the European Union', was begun in 1998 under the European Health Monitoring Programme with the aim of selecting a concise set of instruments to simultaneously monitor mortality and the different facets of health. An in-depth analysis of the current health survey instruments in Europe together with a review of past research, found that, although harmonization in instruments appeared to exist superficially, major differences existed. Four instruments have been recommended (where necessary using existing instruments with modifications suggested by the research literature) covering physical and sensory functional limitations, activity restriction, self-perceived health and mental health. Additionally a new global activity limitation indicator (GALI) has been developed. These instruments are firmly anchored to past research and the health concepts behind the indicators and their relevance to policy and guidelines for implementation are explicitly made. The second phase of the project will recommend further instruments, leading to health expectancies that cover all the conceptual framework of population health measurement. This will allow assessment of health inequalities between the European Union countries, an appreciation of the causes and the production of profiles for each country in terms of the various facets of health.

Keywords: disability, health expectancy, health indicators, mental health, self-perceived health

In contrast to mortality, notions such as health or morbidity are difficult to define. Health has been defined as a composite of current state and prognosis¹ and thus is not only 'the ability to function now, but the outlook for future functional ability'.² This life-course definition justifies health expectancies as fundamental population health indicators since they measure the lifetime spent in different health states.

Health expectancies extend the concept of life expectancy to morbidity and disability and, being independent of the population size and age structure, allow direct comparison of population subgroups (e.g. sexes, socio-economic categories, regions or countries) as well as estimating changes over time. Calculation of potential gains in health expectancies, brought by the simulated

elimination of different diseases, gives relevance and definition to public health targets and priorities. The relevance of these indicators lies in their ability to simultaneously assess the evolution of mortality, morbidity and disability and thus to assess the likelihood of different health scenarios proposed: 'pandemic of chronic diseases and disabilities',^{3,4} 'compression of morbidity',⁵ or contradictory evolutions including 'dynamic equilibrium' with an increase in overall disability but a decrease in the level of severity.⁶

The Health Monitoring Programme (HMP) was a five-year programme developed by the European Union (EU) to establish a Community health monitoring system covering a broad list of indicators including health expectancies.⁷ Estimates of health expectancy (generally disability-free life expectancy) are available for 49 countries,⁸ although direct international comparisons are difficult because of varying definitions of disability. There have been a number of efforts to introduce common instruments into European health interview surveys⁹⁻¹² though these have been unsuccessful mainly due to the lack of validation in peer-reviewed literature, implementation guidelines particularly in validated translations, and follow-up to discuss implementation problems. Consequently, many countries have changed instruments with little awareness of the implications, though recent scientific work has highlighted the importance of these issues.¹³⁻¹⁶

Since health expectancies combine life expectancy with a health concept, there are as many possible health

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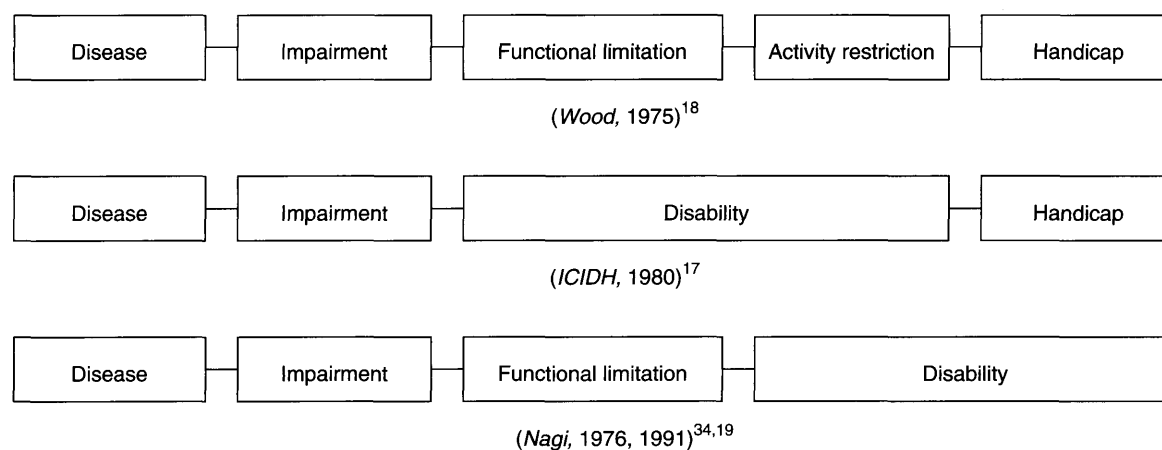


Figure 1 Models of the disablement process

expectancies as health concepts. The profusion of possible indicators made it necessary for the Euro-REVES 2 project to decide how to meet the aim of the European HMP,⁷ since too many indicators are distracting while too few may hide any trade-off between different facets of health. The project began therefore by defining the conceptual framework for health to be used and the selected domains in which to develop instruments. This first phase of the project was not designed to be comprehensive in the domains covered, but a subsequent phase would complete the task.

The aim of this paper is to outline the methods used and the lessons learned in developing a set of recommended instruments for introduction into European surveys for the calculation of complementary and harmonized health expectancies. First, the design of the project and the conceptual framework within which the focus was on specific domains is described: body functional limitations, activity restriction, perceived health together with special attention to mental health. Second is outlined the selection, according to their policy relevance, of a set of five instruments corresponding to these concepts:

- a set of items covering physical and sensory functional limitations,
- a scale of personal care activities,
- a global activity limitation indicator,
- a global self-perceived health indicator, and
- a set of items specifically measuring mental health.

These form the first phase of the project which will ultimately recommend the full set of instruments to monitor population health. Finally some conclusions are drawn about the issues surrounding the development of common and harmonized health status measurements.

THE EURO-REVES 2 PROJECT

The Euro-REVES 2 project was made up of research teams from seven countries: Belgium, Denmark, France, Italy, the Netherlands, Spain and the United Kingdom. An important aspect was the multidisciplinary, with psychologists, statisticians, social scientists, demographers and epidemiologists, each bringing different strengths and

approaches. After initial meetings to choose and refine the common framework and domains, the group split into teams with the remit to systematically review research on a domain and instruments, particularly wording and underlying concepts, review the relevant questions in existing European health surveys, recommend the optimum instrument and any further work needed. After the initial scoping of instruments and related research, each team presented their preliminary recommendations to the whole group and then to invited policy-makers from a range of countries for further input and consensus.

To overcome previous problems in countries not adopting recommended instruments because they wished to retain questions for calculating time trends, it was decided to provide two types of indicator: one global and one more specific. The global indicator, designed to require little room and time in surveys, would provide an overview of the field, thus capturing all the existing differences between countries or regions over time, whether they were due to 'real' health problems, problems of social organization or cultural questions. The more specific instrument, on the other hand, would provide a greater understanding of such differences through more in-depth questions covering the domain.

Defining a common reference framework

The framework chosen to reflect the multi-dimensional nature of health was based on: a life-course definition,¹ different perspectives on health and approaches of assessing health status, and specific conceptual models for each approach. The framework also acknowledged the importance of the mental health dimension.

The classical bio-medical approach, where psychological and social issues were barely acknowledged and mental illness represented a grey area, worked well when infectious disease was most prevalent. Following the epidemiological transition, the 'functional approach' was developed to assess the consequences of emerging chronic morbidity on daily life. This disease/disability model, the basis of the International Classification of Impairments, Disabilities and Handicaps (ICIDH),¹⁷ shared similarities

with other models of the disablement process^{18–21} (*figure 1*) though disagreement exists on the place of ‘disability’. We adopted the Wood model¹⁸ with ‘functional limitations’ (at the body level) and ‘activity restriction’ (at the level of the person in society), in keeping with the new International Classification of Functioning, Disability and Health (ICF).²² Including both functional limitations (physical, sensory and cognitive) and activity restriction is important: first, to describe the disablement process and the mechanism of transition between health states for earlier recognition of and more appropriate intervention against activity restriction to prevent a heavier caring burden later;^{14,23} second, to discover risk factors; third to recognize possible compensatory strategies through comparison of those functionally limited and restricted in activities and those coping with their limitations, currently impossible since most existing instruments do not make this distinction. Moreover, including mental health within the framework distinguishes between autonomy (the facility to set one’s own rules) and independence (the independent realisation of a whole series of activities).²⁴

The ‘perceptual approach’ recognizes the need to elicit an individual’s own assessment of their health status through self-perceived health (or equivalent terms like self-rated health, self-defined health and self-assessed health). Self-perceived health (SPH) can be viewed as a subjective judgement, based on the internal assessment by the individual, of specific health problems, including not only disability but also sub-clinical conditions and providing a holistic approach to the concept of health. As a contributor to Health-related Quality of Life (HRQL), SPH questions are often included in more comprehensive HRQL instruments, often through a single question relating to current health and taking into account health expectation and/or comparisons relative to peers. SPH is an important health indicator because it is complementary to functional health; is an independent predictor of survival in older people²⁵ and associated with other health outcomes and health service use;²⁶ and the level of poor health perception in a population is an indication of unmet needs at a global level.

Population indicators of ‘mental health’ are being developed since mental disorders are felt to be under-reported, under-diagnosed and under-treated and are now recognized as one of the principal causes of disability, consuming a significant proportion of the health budget in western countries. Research is mostly focused on depression and anxiety disorders due to their high prevalence, and psycho-geriatric disorders, such as dementia, whose prevalence is likely to increase significantly in parallel with population ageing. Specific targets for improving mental health have been set both in Europe^{27,28} and in a number of individual European countries. However, health surveys still do not commonly include instruments to measure the mental health of their populations, partly due to the stigma of mental illness perceived by individuals.

THE RECOMMENDED INSTRUMENTS

In the first phase reported here, the project focused on functional health (functional limitations, activity restriction both specific and global), self-perceived health and mental health. These broad areas, the instruments recommended and the reasons for the choice of response categories have all been defined in terms of their relevance to health policy.

The systematic review undertaken for each domain determined possible instruments as well as general research on issues such as wording, response categories and desirable criteria. Instruments used in European health interview surveys were reviewed through a variety of sources^{29–32} in terms of domain coverage and comparability of the questions through an analysis of the descriptors and wording used, with reference to the main instruments currently recommended. After reviewing all the information, a decision was made to recommend an existing instrument (with or without changes) or to develop a new instrument satisfying the desirable criteria. Notable in all the reviews of European health surveys was that even if countries followed recommended instruments, they did not adhere to these exactly (for instance wording or selected items), destroying comparability.

From the review of the literature, a number of common conceptual and measurement issues were identified. Differentiation of long-term or short-term problems were common to all domains and, in all cases, instruments were sought that measured long-term problems. A common issue for functional limitations and activity restriction was the number of items included and their wording. For comparative purposes, the number of items included in the indicator is of prime concern, since the greater the number, the greater the resulting prevalence of functional health.¹⁵ In terms of the wording, the choice is between soliciting performance (do you), abilities (can you), or potential capacities (could you), describing different stages and levels of the disablement process.¹⁶ Additionally, the level of functional health reported will differ if the question: does not explicitly specify the use of technical aids or human help; explicitly specifies without help; or explicitly specifies with help.³³

Functional limitation

Nagi³⁴ first proposed functional limitation (FL) measures and established the concept of *Physical Performance*, referring to sensory-motor functioning and described by limitation in activities such as walking, bending, hearing (*table 1*). In 1981, the OECD proposed an instrument⁹ for the functional consequences of disabling health problems (*table 1*). Later WHO-Europe recommended an instrument based on the ICIDH framework¹⁷ with, out of a total of 13 items, three core and three optional items on FL³⁵ (*table 1*). FL items have also been included in a number of generic instruments: the Sickness Impact Profile (SIP),³⁶ the Nottingham Health Profile (NHP)³⁷ and the Short Form Health Survey (SF-36).³⁸

From the literature on wording and choice of items it was concluded that an instrument to assess physical and

Table 1 Reference instruments for measuring disability

Types of activities	Katz (1963) ⁴⁰	Nagi (1976) ³⁴	McWhinnie (1981) ⁹ (Long-term disability 10 items minimum core set ^a)	WHO-Euro (1988) ¹⁰
Mobility				
Mobility			Move between rooms ^a	Confined to bed even though there may be help to get you up; sit in a chair (not a wheelchair) all day even though there may be help for you to walk; are you confined to your house/flat and garden
Locomotion		Walking	Walk 400 metres without resting ^a	Furthest you can walk on your own without stopping and without severe discomfort
Stairs		Going up and down stairs	Walk up and down one flight of stairs without resting ^a	(Optional); can you walk up and down a flight of 12 stairs without resting; can you do this if you hold on and take rests
Sensory				
Hearing			Hear normal conversation with another ^a Hear normal conversation with 3 or 4 persons	Hearing good enough (with a hearing aid if necessary) to follow a TV programme at a volume others find acceptable or if no, can you follow a TV programme with the volume turned up (with a hearing aid if necessary)
Seeing			Read ordinary newsprint ^a See the face of someone from 4 metres	Can you see well enough (with glasses or contact lenses, if necessary) to recognize a friend at a distance of four metres (across a road); if no, can you see well enough to recognize a friend at a distance of one metre
Speaking			Can you speak without difficulty ^a	(Optional) can you speak without difficulty
Self-care				
Dressing	Dressing, undressing, selecting clothes from closets and drawers		Dress and undress ^a	Dress and undress yourself on your own
Feeding	Feeding (from plate to mouth)		Can you cut your own food ^a	Feed, including cutting up food
Transfer	Moving in and out of bed		Get in and out of bed ^a	Transfer from bed; transfer from chair
Washing	Bathing (sponge, shower and tub)			Wash hands and face on your own
Toilet	Getting to and using toilet			Get to and use the toilet
Cutting toenails			Can you cut your toenails	
Continence	Controlling urination and defecation			Continence—lose control of your bladder
Agility				
Bending		Stooping, bending, or kneeling; reaching with either/both arms	Bend down (when standing) and pick up shoe ^a	(Optional); can you (when standing) bend down and pick up a shoe from the floor
Manipulating		Using hands and fingers		
Chewing			Can you both bite and chew on hard foods (for example: a firm apple or celery)	
Strength and endurance				
Carrying		Lifting or carrying weights	Carry an object of 5 kilos for 10 metres ^a	
Standing		Standing for long periods		
Running			Could you run 100 metres	

a: 'Do you perform ...' without supervision, direction or personal assistance; coded as independent, receiving partial assistance, dependent.

'Do you have any difficulty ...'; coded as no difficulty, some difficulty, great difficulty.

'Can you ...'; coded as yes without difficulty, with minor difficulty, major difficulty, unable to do.

'Can you ...'; coded as without difficulty, with some difficulty, only with someone to help.

sensory FL should satisfy the following criteria: one item for each category of physical and sensory FL; clear and simple wording; same number of item response categories; clear reference to ignoring temporary problems; wording based on ability ('Can you') without human assistance since individuals do not necessarily face the situation proposed in FL items.³⁹ The latter is in contrast to personal care activity restrictions, faced on a daily basis and therefore best assessed in terms of performance.

The two instruments designed specifically for disability from OECD⁹ and WHO-Europe¹⁷ were taken as the main reference instruments, together with the SF-36³⁸ as it had been widely used within Europe. Of the 15 European surveys that included physical and sensory FL or were disability surveys, almost all used the OECD or WHO-Europe recommendations as a basis for at least one item, while three surveys used the 'Physical functioning' module in the SF-36, though in all cases many changes had been made.

In view of the criteria, and the fact that the three main reference instruments were a mix of activity restriction and FL items and covered only part of the physical and sensory domains, it was felt that no existing instrument could be recommended without substantial revision. A new instrument was developed (*appendix 1*) satisfying the above criteria. This instrument will make it possible to calculate life expectancy free of FL according to four levels of severity: without any FL; with moderate FL (some FL but not unable to perform the actions under consideration); severe FL (totally unable to perform at least one of actions under consideration); extreme FL (totally unable to perform any of the actions under consideration). In the next phase the aim is to develop an instrument for cognitive FL to complete the set.

Activity restriction (specific)

The first identification of a set of activities of daily living (ADLs) for an individual that indicate a high dependence on others when not performed, were based on the activities of feeding, dressing, bathing or showering, using toilets, transferring from bed and chair, and continence (*table 1*).⁴⁰ Continence was later dropped as belonging more to impairment than activity restriction. The WHO-Europe instrument^{10,35} was chosen as our reference as, although it combines functional limitations items and activity restrictions, most of the Katz ADL items are included.

The criteria identified as pertinent for instruments measuring activity restriction were: selecting items according to their hierarchical position in terms of severity; using wording based on performance ('do you') without assistance and without difficulty; making clear reference to duration in order to avoid temporary difficulties; separately assessing difficulty in performance and the use of technical aids; eliciting assistance received from another person.

Unlike functional limitation items which tap different areas, the original Katz scale was based on the finding that ADL items are hierarchical, indicating different levels of

severity from the most severe (feeding, transferring) to the least severe (dressing, bathing) and confirmed by others.⁴¹⁻⁴⁴ It may therefore be possible to reduce the number of items for ADL scales and some authors suggest dropping bathing. Bathing was retained on the basis that washing face/hands and feeding target similar levels of activity restriction, while the moderate level targeted by bathing is not represented by any other item.⁴³ A core of three items only (walking across a room, feeding and dressing) has been suggested, with only limited additional information coming from other items.^{15,43} Since conciseness will increase the chance of the instrument being used, a minimum number of items should be aimed for, though enough to target the whole severity range.

Nine recent European surveys using an ADL scale were found and analysed. Feeding, dressing, transferring from bed were included in most surveys (8/9) and among the five surveys having additional items compared to WHO-Europe recommendations, four had 'bath or shower', and one used 'washing whole body'; seven surveys worded questions in terms of abilities (can you), one used mixed performance-ability (do you usually manage to); one used a two-step approach 'having difficulty/needing help'; five specifically referred to the use of human assistance in response categories; three referred to long-term problems. To satisfy the essential criteria, the WHO-Europe instrument (*appendix 1*) was adapted. The instrument includes: feeding, transferring (bed), dressing, using toilets, bath/shower, these being the most frequently used in existing surveys. To clarify wording and response categories and to obtain information on both human and technical assistance, it is proposed first to evaluate the presence or not of an activity restriction (having difficulty in performing without help or aids), those having difficulty then being asked whether they use help and/or aids, and finally, about residual difficulties (unmet needs). The chosen response categories will make it possible to determine whether differences between countries are due to the extra provision of aids or adaptations, different social structures providing more personal support, or whether there are intrinsic differences in levels of disability. As personal help, aids or adaptations are collected separately, two health expectancies may be computed: life expectancy free of activity restriction and life expectancy free of dependence (with and without severity levels).

Activity restriction (global)

Scientific discussion on a 'Global Disability Indicator' began during the 1996 meeting of the International Network on Health Expectancy (REVES).^{45,46} At the time this 'Global Disability Indicator' was unrelated to any conceptual framework, though the ICF²² gave an opportunity to better improve this with a Global Activity Limitations Indicator (GALI). The following criteria were felt to be essential for a GALI: i) single item; ii) reference to long-standing activity limitations (six months or more); iii) reference only to general health problems; iv) reference to activities people usually do; v) inclusion of at least three levels of severity; vi) not

preceded by a screening question on health problems to avoid selection; vii) usable for all ages (to calculate a uni-dimensional activity limitation-free life expectancy starting from a certain age, preferably birth); viii) extendable by questions on causes, personal assistance or devices used and the life situations in which the activity limitation occurs.

As well as the systematic review, a short questionnaire was sent to around 50 experts in the field of disability research, requesting information on global disability indicators in the expert's country. The resulting candidate GALIs (around 30) were critically reviewed on conceptual and practical criteria (tables 2 and 3). A first screening revealed that some instruments were almost identical, others referred solely to short-term limitations and a few referred to long-standing limitations or to usual activities in a general way. Only two could be classified as single item instruments and most had more than three questions. Less than half the instruments had a range of severity included in the response categories, most only registering the presence or absence of limitations. Regarding all criteria, three instruments met almost all, and in particular the criterion of long-standing limitations. However, of these, two had four questions while one had only two questions and none included a simple range of severity in the response.

Since no instrument met all or most of the criteria, a new one (appendix 1) was proposed which is a global single item instrument with optional additional questions. No restriction is made on the type of activities for which a limitation exists; the wording is simple and the terms used are straightforward and commonly understood, making its use possible with different survey methods (face-to-face, postal or telephone) as well its suitability in general surveys. Life expectancy free of activity restriction may be calculated and the introduction of three response categories (not limited, limited and strongly limited) will allow testing of the plausibility of dynamic equilibrium.⁶

Self-perceived health

The concept of self-perceived health (SPH) recognizes the need to elicit an individual's assessment of their health and of the considerable advantages of measuring overall health through the use of a single question. One of the first SPH questions was 'How would you rate your health at the present time? (Excellent – Excellent for my

Table 2 Conceptual criteria for a Global Activity Limitation Indicator (GALI)

1	A concise set of questions: between one and three questions maximum
2	Presence of long-standing limitations: duration at least 6 months
3	Cause of activity limitation: a general health problem
4	Usual activities: the reference is to activities people usually do
5	Severity of limitations: inclusion of full range in the response with at least three levels
6	No preceding screening for health conditions

age – Good – Good for my age – Fair – Fair for my age – Poor – Very poor)⁴⁷ while the WHO-Europe question is 'How is your health in general? (Very good – Good – Fair – Bad – Very bad)'.⁴⁸ The advantage of SPH is that it provides a global, rather than partial, approach to health, leading to a single figure of population health. SPH can easily be measured through a single question that can be administered in all types of surveys and to a population of all ages.

From the literature, essential criteria for the SPH question were: no reference to either an age (comparative judgement to others of the same age) or time comparison since this prevents the monitoring of the average health of a population; no time limitation; reference to health in general rather than the present state of health, as the question is not intended to measure temporary health problems; single-item measure not specifically referring to different sub-attributes or dimensions of health.

A total of 37 European surveys were found using a SPH question with 39 questions examined (two surveys included two questions). Few surveys (5/37) used an age-related wording, while almost half (14/37) included a reference to time, the majority asking respondents about their 'present' or 'current' state of health. Only 10 surveys followed the WHO-Europe recommendation of five response categories.

Overall, it was felt that the SPH question of WHO-Europe⁴⁸ satisfied the criteria and this was therefore the recommendation (Appendix 1). However, even with agreement on the structure and wording of the question, it is likely that answers will at least partly reflect cultural differences in health perception across Europe, illustrating the importance of ongoing validity studies to ensure that the SPH question is being interpreted and understood in the same way.

Mental health

Following on from the definition of health as 'a state of complete physical, mental and social well being and not

Table 3 Practical criteria for a Global Activity Limitation Indicator (GALI)

1	Questions compact and in simple words
2	Same instrument for total population (including institutionalized population)
3	Same instrument for all age categories
4	To be used without further explanation or instructions
5	To be used in self-administered, face-to-face or telephone survey
6	To be used in general, health and disability surveys
7	No comparison with same age group, sex or with previous periods
8	Validated
9	If necessary the GALI can be extended by sub-questions, indicating specific life situations: school/work, house, leisure time
10	Specific question for identification of the health causes of the activity limitation
11	Specific question for use of devices or assistance

merely the absence of disease or infirmity',⁴⁹ others have developed an equally broad definition of mental health as 'a positive sense of well-being'.⁵⁰ While recent WHO publications continue to assert that 'mental health is not just the absence of mental disorder', others have argued that this is exactly how it should be defined.⁵¹

A measure of general mental well-being has been sought, sensitive to changes due to all causes (disease incidence, clinical intervention, socio-economic and political change). A literature search found over 20 possible instruments of which four were considered to constitute generic instruments adapted to the calculation of health expectancies: the Cornell Medical Index,⁵² the General Well-being Schedule,⁵³ the SF-36 five item Mental Health Inventory (MHI5)⁵⁴ and the General Health Questionnaire (GHQ).⁵⁵

It was concluded that the GHQ 12 item version (GHQ-12) would be the recommended instrument due to its simplicity, brevity, excellent psychometric properties, its extensive use throughout Europe in both cross-sectional and longitudinal surveys and recommendation for use in European health interview surveys.³⁵ However sometime later, Euro-REVES 2 hosted a meeting with two other European groups: the European Health Interview Surveys group (EuroHIS) and the HMP Mental Health Group, and a consensus was reached that each group would recommend the MHI-5 (*appendix 1*) to measure psychological distress and the energy/vitality item from the SF-36 and a single item on happiness to measure positive mental health. With suitable validated cutpoints, this will permit the calculation of life expectancy in good or poor mental health.

DISCUSSION

The implementation of health policies at the level of country cannot be evaluated using standard evaluative techniques but comparisons between countries can help us learn from each other. Several inventories of European health surveys have been made by international organizations and, as those, our Euro-REVES group noted the superficial similarity of instruments, demonstrating a will to harmonize. However, our in-depth analysis with current scientific research, found local alterations to recommended instruments, with little understanding of the effect. It was surmised that the reasons for these changes are: the absence of any conceptual framework behind the questions, clearly demonstrated in the recommendations; and the absence of the science behind specific questions forms, more particularly the effect of wording changes on possible responses. Differing study designs containing the instruments as well as analysis may also contribute to lack of comparability through the inclusion/exclusion of institutionalized populations, age ranges covered, mode of data collection (face to face, self-administered, telephone), selection of respondents (proxies, self respondents, or both) and the management of missing data. Recommended instruments should thus be accompanied by an implementation plan to address these design issues, regular evaluation of the number of

countries using them and the quality of data collected, including response rates.

Wherever possible, unless there was confusion with current concepts, the proposed instruments were based on existing recommendations. This was the case for two of the instruments proposed: SPH where the question chosen is that already recommended by the WHO-Europe¹⁰⁻¹² and mental health where the (initially) chosen instrument was the GHQ-12⁵⁵ also recommended by WHO-Europe. However, this latter case also highlighted the need to be aware of other groups working in the same health areas to ensure that contradictory recommendations were not made and subsequently the choice was aligned with other groups to the MHI5.⁵⁴ For functional health, an update of current recommendations^{9,10} is proposed and, for the global instrument a new international standard – a Global Activity Limitation Indicator, or GALI, to be more in keeping with the new classification.²² With these instruments the next step proposed is validation to ensure equivalence in questions between countries and, where necessary, the definition of cutpoints.

Most European countries run regular health interview surveys to monitor population health. The longest established surveys began before the current desire to harmonize health information within the European Union and, as a result, these countries tend to be the most reluctant to implement recommended instruments. To address this it is intended, ultimately, to provide two types of each indicator: a global level instrument, concise and requiring little room and time in surveys and a more specific instrument to explain differences in more depth. In this first phase two global indicators and three specific indicators have been recommended and, in the second phase, global and specific questions are proposed on chronic morbidity and specific questions on each of cognitive functional limitations, household activities, other activities of daily living and perceived health. This coherent set of instruments will take account of current research and lead to several health expectancies, covering the totality of the conceptual framework of the measurement of population health. Thus we will be able simultaneously to measure the extent of health inequalities between EU countries, to appreciate the causes and to profile each country in terms of the various concepts of health: chronic disease, functional limitations, activity restrictions, mental health and perceived health.

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Appendix Proposed instruments

FUNCTIONAL LIMITATIONS

Selected descriptors

- 1 See clearly newspaper print
- 2 See clearly the face of someone 4 metres away (across a road)
- 3 Hear distinctly what is said in a conversation with one other person
- 4 Walk without difficulty 500 metres
- 5 Go up and down a flight of stairs without difficulty
- 6 Speak clearly to others
- 7 Bite and chew on hard foods (such as a firm apple) without difficulty
- 8 Reach out an arm to shake someone's hand without difficulty
- 9 Use fingers to grasp or handle a small object (like a pen) without difficulty
- 10 Turn a tap without difficulty
- 11 Bend down and kneel down without difficulty
- 12 Lift and carry a full shopping bag of 5 kilos without difficulty

Suggested wording (Using 'seeing clearly newspaper print' as an example):
Think about situations you may face in everyday life. Please ignore temporary problems:

1 Can you clearly see newspaper print *without glasses or any other aids/devices*? Yes/No*

If 'no': With your glasses or other aids/devices, can you clearly see newspaper print?

Yes / no / have no glasses or other aids/devices.

* If answer "I am blind or I cannot see at all", go to question 3 (skipping other questions on seeing).

ACTIVITY RESTRICTION

Selected items

In everyday life, ignoring temporary problems, do you usually without any difficulty and without (human/technical) help:

- 1 feed yourself
- 2 transfer in and out of bed
- 3 dress and undress yourself
- 4 use toilets
- 5 bath or shower yourself

Suggested wording (using 'feeding' as an example)

Think about your personal care activities in everyday life. Please ignore temporary problems:

1 Do you, usually, feed yourself *without any difficulty and completely on your own*? Yes/No

If 'Yes' go to 2; if 'No', go to a) and b).

a) Does someone help you to feed yourself?* Yes/No

If 'Yes' to a).

* Can also ask WHO if answer YES to receiving help.

b) Are you satisfied with the help received or are there problems you still need help with? Yes/No

GLOBAL ACTIVITY LIMITATIONS INDICATOR

For at least the last 6 months, have you been limited because of a health problem in activities people usually do? Yes, strongly limited / yes, limited / no, not limited.

Optional additional questions:

Question 2A: For at least the last 6 months have you been limited in activities people usually do at school or work because of a health problem? Strongly limited/ limited / not limited.

Question 2B: For at least the last 6 months have you been limited in activities people usually do at home because of a health problem? Strongly limited / limited / not limited.

Question 2C: For at least the last 6 months have you been limited in activities people usually do during leisure time because of a health problem? Strongly limited / limited / not limited.

Question 3: Which health problem causes these limitations: a) an accident/injury, namely ...; b) a disease/disorder, namely ...; c) old age, namely ...; d) at birth, namely ...; e) other cause, namely ...; f) don't know.

Question 4: Do you use any kind of equipment or devices or do you use assistance from other people to carry out activities people usually do? Yes, only equipment or devices / yes, only assistance from people / yes, both equipment or devices and assistance from people / no / refusal / do not know / no answer.

PERCEIVED HEALTH

How is your health in general? Very good / good / fair / bad / very bad.

MENTAL HEALTH

Psychological distress

How much, during the past 4 weeks ...

- 1 Did you feel very nervous?
 - 2 Have you felt so down in the dumps, nothing could cheer you up?
 - 3 Have you felt calm and peaceful?
 - 4 Have you felt down-hearted and depressed?
 - 5 Have you been happy?
- Response: All of the time / most of the time / some of the time / a little of the time / none of the time

Positive mental health

How much, during the past 4 weeks ...

- 1 Did you feel full of pep?
 - 2 Did you have a lot of energy?
 - 3 Did you feel worn out?
 - 4 Did you feel tired?
- Response: All of the time / most of the time / some of the time / a little of the time / none of the time
- Would you describe yourself as being usually
- 1 happy and interested in life,
 - 2 somewhat happy,
 - 3 somewhat unhappy.
 - 4 unhappy with little interest in life, or
 - 5 so unhappy that life is not worthwhile?