J Public Health (2005) 13:122–127
DOI 10.1007/s10389-004-0097-3

ORIGINAL ARTICLE

Ulrike Dapp · Jennifer Anders · Wolfgang von Renteln-Kruse · Hans Peter Meier-Baumgartner

Active health promotion in old age: methodology of a preventive intervention programme provided by an interdisciplinary health advisory team for independent older people

Received: 6 September 2004 / Accepted: 10 December 2004 / Published online: 16 February 2005
© Springer-Verlag 2005

Abstract People live longer today and, therefore, have more opportunity to a quire non-fatal disabilities in old age. Disability in old age has multifactorial causes, including physiological, psychological and social risk factors. An innovative health promotion and prevention programme designed for elderly people was developed at the Albertinen-Haus Geriatrics Centre in Hamburg in 2001 and offered to residents of the city aged 60 years and over who were living in their own homes. Eligible individuals were independent, i.e. without disabilities (not in need of care or support according to the German health system's categorization), and without cognitive impairment. The programme focuses on areas of health behaviour that are interrelated and target self-efficacy and empowerment. The programme used an interdisciplinary approach in group sessions. The team of health promotion advisers (*Gesundheitsberater-Team*) consisted of members of four professions, i.e. physician, social worker, physiotherapist, and nutrition and home economics specialist. We decided to work in group sessions because of the potential for positive dynamic effects between group participants and for reasons of cost. We also developed a curriculum to train professional members of interdisciplinary geriatric teams to work as health promotion advisers for elderly people.

Keywords Health improvement · Prevention · Elderly · Empowerment

U. Dapp (✉) · J. Anders · W. von Renteln-Kruse · H. P. Meier-Baumgartner
Albertinen-Haus,
Zentrum für Geriatrie und Gerontologie,
Wissenschaftliche Einrichtung an der Universität Hamburg,
Sellhopsweg 18-22, 22459 Hamburg Germany
e-mail: dapp@albertinen.de
Tel.: +49-40-55811871
Fax: +49-40-55811874

Introduction

Increasing life expectancy brings with it an increased risk of acquiring functional deficits and disabilities at more advanced ages (Mathers et al. 2001). Disability and dependency in the older population have considerable consequences for society as a whole because they are associated with intensive use of health and care services and with increases in stress on caring-giving relatives (Vita et al. 1998). For these reasons it is especially important to find ways of promoting independence and quality of life in this growing sector of the population. In current discussions on health policy, primary and secondary prevention are seen as playing a crucial role as a fourth pillar of the German healthcare system in future alongside treatment, rehabilitation (tertiary prevention) and care. Appropriate measures need to be taken to prevent loss of functional abilities in order to increase active life expectancy.

It is not clear, in this connection, whether it is only possible to improve mortality in old age with such measures or whether it is also possible to influence morbidity and the prevalence of disability. The optimal result would be an increase in disability-free years of life over and above those expected from the total increase in life expectancy currently being seen (Robine et al. 2002).

Disability and dependency in old age stem from a combination of medical, functional, psychosocial and environment-related factors. A systematic literature survey and analysis of 78 studies of older people living in their own homes identified factors associated with a risk of loss of function (Stuck et al. 1998). Most of these factors were related to lifestyle, e.g. alcohol consumption, smoking, nutrition (body mass Index above or below average), little physical movement and a limited social network. Many of these factors interact with one another so that a focus on individual factors appears unlikely to produce useful results. For this reason successful models for prevention in old age are usually based on a multidimensional approach.

From an economic point of view, preventive measures constitute a worthwhile investment if they help to prevent illness-related costs from being incurred or if they reduce the cost of healthcare on balance. Preventive measures currently account for only 4% of the actual total expenditure of the German public health system. This is not sufficient to allow full exploitation of resources offering long-term preventive opportunities. However, the potential savings are estimated at 25–35% of current health costs (Sachverständigenrat für die Konzertierte Aktion im Gesundheitswesen 2001).

Targeted interventions based on a comprehensive multidimensional geriatric assessment can reduce the need for support and care (Stuck et al. 1993). For older people living in their own homes, studies have investigated various forms of intervention for different target groups provided by means of so-called preventive home visits. In spite of the existence of a remarkably extensive body of data, there is still disagreement as to their usefulness (von Renteln-Kruse et al. 2003).

A variety of approaches to prevention and health promotion in older people have been developed and evaluated at the Albertinen-Haus Geriatric Centre in Hamburg. Some particularly interesting products of this work are the definition of appropriate target groups, development of potential methods of supplying interventions and assessment of acceptance and efficacy. In 2001 we participated in a European study on prevention for older people entitled "Disability prevention in the older population[1]. This controlled randomised EU study involved completion of health profiles (using a self-completion health questionnaire with written feedback) in Germany, Great Britain and Switzerland. The study gave access to a non-selected group of people aged 60 years and over who were patients at Hamburg GP (general practitioner) practices (Stuck et al. 2002). It was planned that accompanying home visits should be made at regular intervals by district nurses/family health nurses. This was achieved in Switzerland, but in Germany there were no existing structures for preventive home visits. Instead we made use of the structures and professions established in the German health system for older people, namely the interdisciplinary geriatric team. This innovative health promotion programme for independent older people (Meier-Baumgartner et al. 2004) functions so well that we would like to introduce it to a wider public in the present article. We have also trained a nurse in carrying out preventive home visits and have evaluated her work using an assessment instrument especially adapted for home visits (von Renteln-Kruse et al. 2003).

[1] "Disability prevention in the older population" (5th Framework European Commission QLK6-CT-1999–02205, Administrative Coordinator: Professor Dr. med. H. P. Meier-Baumgartner, Albertinen-Haus Hamburg; Technical Coordinator: Professor Dr. med. A.E. Stuck, Spital Bern Ziegler, PRO-AGE Study Group).

Active health promotion in old age in Hamburg

The major focus of the programme "Active health promotion in old age" was to develop a range of low-cost, low-threshold advice using existing local structures for older people and integrating established professional groups (the geriatric team). The target group consisted of independent people aged 60 years or over, with no cognitive problems or special care needs (as assessed by the German health and care insurance system), who were living in their own homes. A multidimensional approach to the promotion of individual responsibility was chosen. In half-day events four members of the geriatric centre's interdisciplinary geriatric team work with small groups, providing general information on particular topics and also giving individual advice.

Access to the health promotion programme was arranged through GPs. The GP already plays a decisive role for older patients as an important contact and confidant in medical and social matters. Early diagnosis of illness, preventive medicine and health examinations are a fundamental part of GP care. As a consequence of our cooperation with GPs (Meier-Baumgartner and Dapp 2001), and the requirement made in the German government's fourth report on ageing to make use of GPs' willingness to acquire geriatric knowledge (Bundesministerium für Familie, Senioren, Frauen und Jugend 2002), the innovative prevention programme is supported by a quality circle for doctors working in geriatrics that meets regularly. The geriatric hospital thus performs other tasks beyond providing patient care, in particular transferring professional knowledge into community-based medical care and into the local support network for elderly people (von Renteln-Kruse 2004).

The development, performance, scientific monitoring and implementation of this programme as a part of routine care received financial support from the Federal Ministry for the Family, Elderly People, Women and Young People in Berlin and the Max and Ingeburg Herz Foundation in Hamburg (Meier-Baumgartner et al. 2004).

Intervention design: emphasis, setting, teaching methods and timetable

The main areas of emphasis for the intervention programme were the areas for which individuals themselves are responsible and which are recognised as important for successful ageing (Dapp 2004). Healthy eating, active social participation and physical activity are mutually dependent and influence quality of life in old age (Lehr 2003; Schwartz et al. 2003).

Information relating to these areas is provided by an interdisciplinary team of health advisers made up of members of four professions—a geriatrician, a home economics and nutrition specialist, a physiotherapist and a social worker. The team was specially trained in preventive work (Fig. 1). A course (7 days) has been developed at the Albertinen-Haus to train members of these

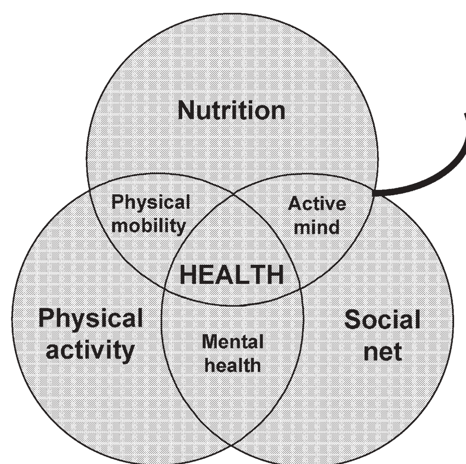

Fig. 1 Interdisciplinary health advisory team ("clover leaf team"): active health promotion in old age

professions with geriatric experience to be health advisors for older people.

Advice sessions are carried out with groups of up to 12 participants at the geriatric centre. These group events allow the most efficient possible use of human, infrastructural and financial resources. At group events it is possible to give participants an interdisciplinary account of connections and interactions between nutrition, physical activity and social activity. A particular advantage of such events is the discussion stimulated among the participants, as has also been reported in programmes for diabetics (Lederman and Farrer 1986).

Advice on physical activity, nutrition and social environment usually aims at changing habits that have existed for a long time and therefore needs to take into account the individual situation (Labonte and Penfold 1981). Changes need to be made in small but realistic steps. Participants are actively drawn into the process of making decisions on which health-promoting behaviours can be integrated into their daily routines (shared decision making). The aim is to improve participants' ability to recognise and solve problems independently (empowerment) and to ensure that the recommendations that have been worked out are acted upon.

Group events in practice

By way of introduction the members of the health advisory team give a brief outline of their areas of expertise illustrated with slides. The geriatrician first describes the connections between prevention and changes in lifestyle and taking responsibility for growing old successfully. The social worker then gives an overview of the ways in which it is possible to plan for old age, the forms of accommodation designed to suit older people and the importance of social contacts. She also outlines advance directives and living wills, gives information about social advice centres in Hamburg and, in addition, offers individual advice.

The physiotherapist explains the importance of regular physical activity, especially in the prevention and treatment of cardiovascular disorders, painful joint problems and falls. Examples are given of simple and practicable ways to promote movement as part of daily routines. The home economics and nutrition specialist then informs participants about the principles of healthy eating and recommends a balanced and varied mixed diet. The need for adequate and regular fluid intake is also emphasised. The doctor brings the introductory talks to a close with some basic advice on taking medicines. She discusses possible problems in relation to self-medication and compliance and helps participants to draw up a medicine plan to manage their medication.

During the introductory talks all participants are increasingly drawn into the proceedings: they are encouraged to ask questions if they do not understand and are asked questions in return; speakers give practical examples and invite participants to take part in a short quiz. This procedure has the following advantages:

- Complex connections and their interactions are made clearer.
- The information provided is seen in the context of the individual's personal situation.
- Bringing in personal experiences gives the advisors authenticity, which provides a basis for a trusting relationship with the participants.
- Participants' attention is encouraged by addressing them directly.
- Drawing the participants step-by-step into the proceedings has an empowering effect, promoting the desired "self efficacy".
- Preparation is made for the subsequent intensive individual advice sessions that take place in small groups.

Table 1 Instruments overview: active health promotion in old age

Instrument
Coop Charts (modified from Nelson et al. 1990) [a]
Motivation Record (adapted from Health Opinion Survey, Krantz et al. 1980) [a]
One-Day Dietary Record[a, b]
Personal Nutrition Letter (semi-standardized) [a]
Record of Regular Physical Activity [a, b]
Personal Activity Letter (semi-standardized) [a]
Medication Plan[a, b]
Pain Diary[a, b]
Housing options[a]
Food Pyramid adapted for this age group[a]
Liquid Intake Timetable[a]
Useful addresses for social activities, health and advice centres in the Hamburg area[a]

[a] In: Meier-Baumgartner et al. 2004
[b] In: von Renteln-Kruse et al. 2003

Interactive small groups

In the second part of the event, work continues in groups of up to six participants on the topics of nutrition (home economics and nutrition specialist) and physical activity (physiotherapist). Participants complete a one-day dietary record and a record of their regular physical activity (Table 1). This encourages self-reflection and leads via physical problems to individual interests and goals. This is ideal preparation for the subsequent individual advice sessions. While the records are still being filled out, the advisors start to give individual recommendations relating to the information provided by individual participants. Concrete options are offered as to which physical activities or which healthy eating habits can be integrated into the participant's daily routine. For example, participants are given the addresses of centres close to their homes offering special activities for elderly people (e.g. sport courses). In preparation for the event the local network of existing support for elderly people and senior citizens' organisations was investigated and relevant details were incorporated into a database. The health advice team utilises the dynamics of small groups and empowers participants by supporting them in taking on responsibility for their own health. The exchange of experiences among participants helps to highlight possible obstacles. Strategies for overcoming problems are discussed with the advisor (Lewin 1936).

When all participants have taken part in both small groups (nutrition and physical activity), the whole group of up to 12 participants comes together again to receive a range of printed information: a brochure on healthy eating and a food pyramid adapted for the age group, a list of useful addresses for social activities, health and advice centres in the Hamburg area, a medication plan and a pain diary (Table 1).

Table 2 Workshops: active health promotion in old age

Emphasis	Workshop
Nutrition	Shopping (food) training
Nutrition	Food education
Physical Activity	Back Gymnastics
Physical Activity	Feet Gymnastics
Physical Activity	Tai Chi Chuan
Physical Activity	Nordic Walking
Physical Activity	Physical all-round training
Social Net	Housing options
Social Net	Computing

Follow-up after the advice event

About 14 days after the event, each participant receives a personal activity and nutrition letter giving individual recommendations on how to eat more healthily and integrate more high-quality physical movement into everyday life. These recommendations are made on the basis of the records of activity and nutrition completed by the participant and take into account his/her personal likes, dislikes, symptoms and illnesses, e.g. previous cardiovascular illness or arthritis. The letter also includes individually selected addresses of people to contact at sports clubs, senior citizens' organisations, etc. close to the participant's home. The purpose is to put down in writing and thus confirm the agreements reached during the advice event (e.g. to consult the GP) and to provide a motivational boost for personal lifestyle changes.

Participants are offered a second appointment at the geriatric centre in 6 months' time. Attendance is not obligatory, but offers participants an opportunity to discuss the experiences they have had while acting on the recommendations that were agreed on at the first appointment. Successes and failures are discussed and further recommendations are made, if necessary, on the basis of this information. The second appointment also gives participants the chance to take part in workshops (Table 2). These workshops serve as a low-threshold introduction to nutrition, activity and planning for the future and go more deeply into the topics that particularly interest the participants. In some cases, practical experience can help participants to overcome their fear of trying something new, for example in relation to joining a course on Tai Chi or computing.

The programme thus consists of initiatives at a variety of different levels (plenary sessions with talks, interactive work in small groups, provision of written information, personal letter 2 weeks later with follow-up recommendations on nutrition and activity, optional second appointment with discussion of experiences, evaluation in small groups and introductory workshops). This multilevel approach takes into account findings from research on behaviour and gerontology (Becker and Zarif 1978).

Timing these interventions at intervals of varying length is appropriate for promoting the participants' motivation, giving a "booster" effect. The second advice session (6 months later) acts as a repeated stimulus for dealing with problems that participants are unable to

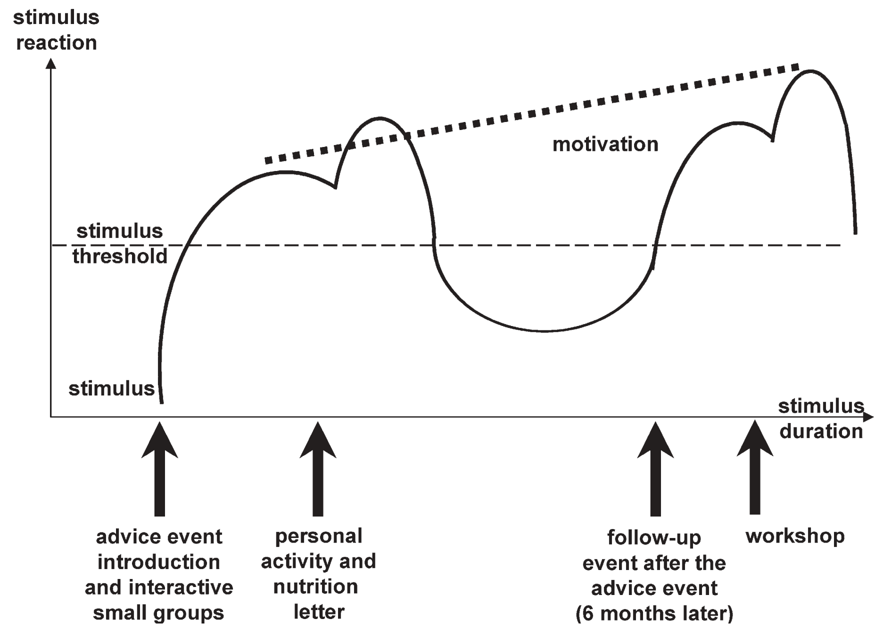

Fig. 2 Motivation and timetabling of interventions at intervals of varying length

overcome on their own and adds a further intensive component—a chance to try something out at an introductory workshop (Fig. 2).

This timing is intended to prevent participants from becoming accustomed to the stimulus of interventions and to avoid overwhelming them and so eliciting a defensive reaction. Similarly spaced stimuli are used in action-oriented progressive education (Hellmich and Teigeler 1992).

Discussion

Elderly and very old people have considerable skill in overcoming problems and can maintain or regain a high level of autonomy, quality of life and satisfaction with life if they have appropriate support. This is shown by the evaluation 6 months after the first appointment (Meier-Baumgartner et al. 2004). Health promotion and preventive initiatives should make use of these valuable resources in the best possible way.

Among independent older people different target groups can be identified for different forms of health promotion programmes (e.g. interdisciplinary versus unidimensional, "you come to us" versus "we come to you", group events versus individual advice possibly given in the course of a home visit). The social health insurance (GKV) health-care reform law, which came into effect in 2000, attempts to confront the lack of clear health goals and consideration of different target groups. The new version of the section of this law on prevention and self-help (§ 20 SGB V) requires that preventive health initiatives identify and focus on a variety of different needs, target groups, methods and modes of access (Schwartz 1999).

Much evidence suggests that, for individuals to make changes in their behaviour, it is necessary that advice be given by a professional team with the support of the GP. Older people have been made critical by their life experience and want to be taken seriously (Phelan et al. 2004). The programme "Active health promotion in old age" is therefore based on the provision of individually tailored, concrete advice by competent professionals with amplification from the dynamic of the group (behaviour-oriented approach). It is also linked to the existing health care network consisting of GPs, the geriatric centre, support for older people and organisations providing health related activities for senior citizens (relationship-oriented approach).

An anonymous final survey among the first 500 participants, carried out 6 months after the first group event, showed high levels of acceptance for the advice programme and the chosen setting of the geriatric centre. The professional knowledge of the advisors in the interdisciplinary team and their practical recommendations received an extremely positive rating. A standardised evaluation of participants, which was carried out after 1 year after the start of the programme, also showed a lasting improvement in healthy behaviour in several areas. Connections in the above-mentioned support network were also strengthened.

As the older people came willingly and in considerable numbers to our innovative prevention programme, and also very quickly made positive behavioural changes in their individual lifestyles, the programme "Active health promotion in old age" is now running at the Albertinen-Haus with a high level of interest, independent of the health questionnaire. So that this programme can also be made available to older people living outside the Hamburg area, we have developed a course to train groups of professionals in this field to work as interdisciplinary health-advice teams. This course is available to German-speaking geriatric teams. Following publication of the related book *Aktive Gesundheitsförderung im Alter*

(Meier-Baumgartner et al. 2004), another book is now in preparation targeted at older people who can benefit from so-called preventive home visits.

Conclusion and outlook

A geriatric centre like the Albertinen-Haus can take on a forward-looking role as a health centre for older people, a development which can be repeated elsewhere. The innovative programme "Active health promotion in old age" is well on its way to becoming a part of the routine care system. The elderly participants and the overwhelming majority of health insurers in the German public health system are currently contributing to the running costs. Monitoring of the programme has now been extended into 2005 so that its effects can be examined and further questions can be answered (in relation to setting, non-participants, gender mainstreaming, cultural differences, etc.).

Acknowledgements Funding (in alphabetical order): Bundesministerium für Familie, Senioren, Frauen und Jugend, Berlin; Max und Ingeburg Herz-Stiftung, Hamburg

References

Becker F, Zarif SH (1978) Training older adults as peer counselors. Educ Gerontol Int Q 3:241–250

Bundesministerium für Familie, Senioren, Frauen und Jugend (Hrsg) (2002) Vierter Bericht zur Lage der älteren Generation in der Bundesrepublik Deutschland: Risiken, Lebensqualität und Versorgung Hochaltriger – unter besonderer Berücksichtigung demenzieller Erkrankungen, Bundesanzeiger Verlagsgesellschaft Berlin

Dapp U (2004) Erfolgreiches Altern durch Gesundheitsförderung und Prävention. In: von Renteln-Kruse W (ed) Medizin des Alterns und des alten Menschen. Steinkopff, Darmstadt, pp 23–37

Hellmich A, Teigeler P (eds) (1992) Montessori-Freinet-Waldorfpädagogik, Beltz-Verlag, Weinheim

Labonte R, Penfold S (1981) Canadian perspectives in health promotion: a critique. Health Educ 4:4–9

Lederman S, Farrer M (1986) The Wisdom Project of the American Red Cross in Greater New York: A blueprint for a community-based health care and health education program. In: Dychtwald K (ed) Wellness and health promotion for the elderly. Aspern, Rockville, pp 247–261

Lehr U (2003) Psychologie des Alterns, 10th edn. Quelle & Meyer, Heidelberg

Lewin K (1936) Principles of topological psychology. McGraw-Hill, New York

Mathers CD, Sadana R, Salomon JA, Murray CJL, Lopez AD (2001) Healthy life expectancy in 191 countries, 1999. Lancet 357:1685–1691

Meier-Baumgartner HP, Dapp U (2001) Geriatrisches Netzwerk: Kooperationsmodell zwischen niedergelassenen Ärzten und geriatrischer Klinik mit Koordinierungs- und Beratungsstelle. Schriftenreihe des Bundesministeriums für Familie, Senioren, Frauen und Jugend, vol 204. Kohlhammer, Stuttgart

Meier-Baumgartner HP, Dapp U, Anders J (2004) Aktive Gesundheitsförderung im Alter. Ein neuartiges Präventionsprogramm für Senioren. Kohlhammer, Stuttgart

Nelson EC, Landgraf JM, Hays RD, Wasson JH, Kirk AW (1990) The functional status of patients. Med Care 18:1111–1126

Phelan EA, Anderson LA, LaCroix AZ, Larson EB (2004) Older adults' view of "successful aging"—how do they compare the researchers' definitions? J Am Geriatr Soc 52:211–216

von Renteln-Kruse W (2004) Geriatrische Methodik und Versorgungsstrukturen. In: von Renteln-Kruse W (ed) Medizin des Alterns und des alten Menschen. Steinkopff, Darmstadt, pp 38–57

von Renteln-Kruse W, Anders J, Dapp U, Meier-Baumgartner HP (2003) Präventive Hausbesuche durch eine speziell fortgebildete Pflegefachkraft bei 60jährigen und älteren Personen in Hamburg. Z Gerontol Geriat 36:378–391

Robine JM, Romieu I, Michel J-P (2002) Trends in health expectancies. In: Robine JM, et al. (eds) Determining health expectancies. Wiley-VCH, Weinheim, pp 9–12

Sachverständigenrat für die Konzertierte Aktion im Gesundheitswesen (2001) Bedarfsgerechtigkeit und Wirtschaftlichkeit, vol I. Zielbildung, Prävention, Nutzerorientierung und Partizipation. Kurzfassung Gutachten 2000/2001, p 26. (www.svr-gesundheit.de)

Schwartz FW (1999) Strukturelle Einbettung und Qualität von Gesundheitsförderung und Selbsthilfeförderung: GKV-konforme Ansätze und Strategien. In: Ländereinigung für Gesundheit Niedersachsen e.V. (ed): Gesundheitsförderung, Prävention und Selbsthilfe als Zukunftsaufgabe der gesetzlichen Krankenversicherung. Gesundheitspolitische Perspektiven, Hannover, pp 7–14

Schwartz FW, Badura B, Busse R, Leidl R, Raspe H, Siegrist J, Walter U (eds) (2003) Das Public Health Buch. Urban & Fischer, München, Jena

Stuck AE, Siu AL, Wieland GD, Adams J, Rubenstein LZ (1993) Comprehensive geriatric assessment: a meta-analysis of controlled trials. Lancet 342:1032–1006

Stuck AE, Walthert JM, Nikolaus T, Büla CJ, Hohmann C, Beck JC (1998) Risk factors for functional status decline in community-living elderly people: systematic literature review. Soc Sci Med 48:445–469

Stuck AE, Elkuch P, Dapp U, Anders J, Iliffe S, Swift C for the PRO AGE PILOT STUDY GROUP (2002) Feasibility and yield of a self-administered questionnaire for health risk appraisal in older people in three European countries. Age Ageing 31:463–46

Vita AJ, Terry RB, Hubert HB, Fries JF (1998) Aging, health risks, and cumulative disability. N Engl J Med 338:1035–1041