Peer reviewed article

Health promotion in primary care: evaluation of a systematic procedure and stage specific information for physical activity counselling

Margareta Schmid[a], *Katja Egli*[a], *Martin W. Brian*[a,b], *Georg F. Bauer*[a]

[a] Institute of Social and Preventive Medicine, University of Zürich, Switzerland
[b] Federal Office of Sports (BASPO), Magglingen, Switzerland

Summary

Principles: Given the demographic development, healthy aging becomes more and more relevant. However, physical activity as an important health resource lacks dissemination in persons of older age in Switzerland. Thus, the present study aimed to develop and evaluate a feasible approach for physical activity promotion in the promising primary care setting.

Method: An expert panel developed two procedures for physical activity counselling in the primary care setting. The first complete procedure consisted of a written assessment and personal counselling by physicians. It was evaluated by focus groups with primary care physicians. The second modified procedure consisted of mailings to inactive patients selected by physicians. It was evaluated by a written questionnaire sent to participants.

Results: The study demonstrated that physical activity promotion through primary care has a high potential. However, core issues such as dealing with time pressure on physicians, applying screening instruments on a broad basis beyond high risk patients, expanding physicians' roles towards primary prevention as well as providing intervention materials actually comprehensible to patients need to be well considered.

Conclusion: To facilitate large scale implementation of physical activity promotion, a range of flexible procedures should be provided so the physician can select and adapt them to his needs and desired role in health promotion. Further, physical activity promotion should be integrated into multidimensional health promotion to meet the diverse health needs of patients. The presented multi-stakeholder approach is generally recommended for future development of health promotion interventions.

Key words: primary care; physical activity; counselling; physicians; health promotion; trans theoretical model; stage specific

Introduction

Elderly people and physical activity

Stuck et al. [1] identified lack of physical activity as an important risk factor for functional status decline in old age [2–4]. Physical activity promotion contributes to the prevention of osteoporosis, falls, and its consequences [5–7]. Additionally it has positive effects on psychological well-being, quality of life, it helps to prevent social isolation [8–12] and it reduces the risk for cardio-vascular disease, metabolic diseases and different types of cancer [8]. In the context of a multidimensional, preventive counselling concept including physical activity promotion for healthy people older than 65 years it could be shown that autonomy and life quality were promoted and less hospitalisations into nursing homes were reported [13, 14].

To achieve positive effects on health the Swiss Federal Offices of Sport and Public Health defined minimal recommendations for health-enhancing physical activity based on international recommendations [15, 16]. These comprise at least 30 minutes of physical activity of moderate intensity daily or on most days of the week [17]. These minimal recommendations can be completed with a systematic training of endurance, strength and flexibility, which is particularly important for persons of older age.

According to a recent survey two thirds of the Swiss population do not meet the recommendations for health effective physical activity and hence are inadequately physical active [18]. Moreover physical activity behaviour tends to decline with increasing age. Physical inactivity causes at

Financial support: The project was financially supported by Health Promotion Switzerland, Federal Office of Sports (BASPO) Magglingen and bfu – Swiss Council for Accident Prevention.

least 2.4 Billion Swiss Francs (2.3 Billion US Dollars) of direct health costs in Switzerland per year [19].

The medical practice as a setting for individual physical activity promotion

Physical activity counselling by physicians is a possible method of reducing physical inactivity and its consequences. It sensitises patients for the issue, identifies regular physical activity as a health resource and suggests individual physical activity possibilities in everyday life [20, 21].

The general practitioner plays a major role in medical care for elderly people and enjoys highest degree of confidence by patients within several occupational groups [22, 23]. There is a need for competent counselling and support for preventive behaviour and the promotion of personal health competency in the general population [22]. In a representative physical activity survey 81% classified physical activity counselling by the general practitioner as important [24]. Furthermore, the importance of physical activity for health is generally well accepted by physicians [25]. Overall, two-thirds of people over 65 consult a physician one to two times a year and one third three to six times [18]. These findings suggest an increased use of medical practices for individually customised physical activity counselling.

Intervention studies for physical activity counselling in the medical practice

For middle aged people at least short term effectiveness of physical activity promotion by general practitioners could be shown [26–29]. Yet, evidence about the effectiveness of physical activity counselling in primary care is still inconclusive [30].

A recent Swiss study of physical activity counselling by physicians and exercise experts for middle aged inactive people showed effectiveness and good acceptance by physicians and patients [31].

However, studies of physical activity counselling for people of older age/elderly people are limited. The completed intervention and feasibility studies in Switzerland were able to show the following: counselling during home visits can influence physical activity behaviour [14, 32], and systematic counselling by general practitioners is practicable for people of older age and is positively judged by physicians and patients [25, 32]. Yet, Eastabrooks et al. [20] state that there is substantial support for behaviour change strategies and interventions in primary care settings and that more research is needed with respect to their effectiveness.

The results of these studies are limited as predominantly those practices with highly motivated and interested physicians participated. The question, therefore, was how existing experiences and approaches could be developed further in order to improve feasibility of physical activity promotion in primary care and to create the potential for large scale dissemination.

Objectives and research questions

Building on the experiences and findings of the Swiss pilot projects the present project aimed to develop a procedure and information material for physical activity promotion for patients older than 65 years and broadly applicable in the primary care setting. This aim follows the increasing call for research with high external validity and thus a high potential for generalisability and dissemination of interventions in a targeted setting, in our case primary care [33]. Based on a systematic field test and formative evaluation, conclusions for improving the initial intervention approach were drawn. The formative evaluation addressed the following questions regarding the primary care setting:

- What are the strengths and weaknesses of this setting for physical activity counselling?
- Which are the appropriate target groups for physical activity counselling in this setting?
- What is an appropriate procedure for physical activity counselling in this setting?
- What are appropriate instruments supporting physical activity counselling in this setting?

Methods

Overall study design

To develop a feasible, broadly generalisable intervention approach, an expert panel representing key stakeholders in this field was constituted: representatives of Health Promotion Switzerland, the Federal Office of Sport, the Swiss Council for Accident Prevention, the Geriatric University Clinic Bern and several other national partners (see acknowledgements). In collaboration with that panel a complete intervention procedure was developed aiming to assess and counsel all inactive patients over 65 years. Inactive patients were selected because they were expected to benefit most from the physical activity counselling. According to the definition of the Federal Office of Sports (BASPO) [19], patients were

classified as inactive if they had less than 30 minutes of moderate intensity activity per week and less than one 20 minutes session of vigorous intensity activities per week.

Since the expert panel anticipated that the complete intervention procedure might be too complex and time consuming for an average primary care practice, in addition a modified, less complex intervention procedure was developed.

To test the feasibility of these two approaches initial focus groups with physicians were investigated. Based on these results, only the modified intervention procedure was further practically tested in the field and evaluated from the patient perspective. The project was coordinated and evaluated by the Institute of Social and Preventive Medicine of the University of Zurich.

Complete intervention procedure

The physical activity counselling was targeted to all patients over 65 years visiting a medical practice by appointment. Intervention materials are described below, the procedure included the following steps:

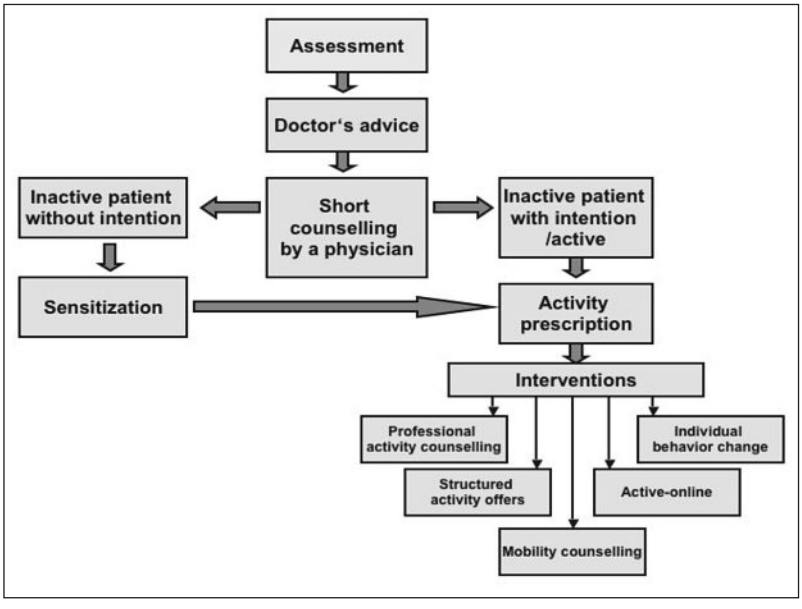
1. Assessment: Based on the patient files, the general practitioner chose patients with an appointment that day who were physically inactive according to a previous assessment or for whom the level of physical activity was unknown. The medical practice assistance handed over two screening questionnaires to the selected patients who filled it out in the waiting room. The screening instruments assessed the level of physical activity, intention to increase this level and potential health risks regarding physical activity.
2. Medical counselling: during the regular medical consultation, the medical practitioner analysed the questionnaires and offered a stage-specific physical activity counselling. This was based on a free personalised booklet given to all patients in which the sections relevant to the specific stage could be highlighted for the individual patient:

– Inactive or insufficiently active patients with no intention for behaviour change: to sensitise this group, brief information on the benefit of increased physical activity was provided. An actual physical activity counselling was planned for a future consultation.
– Inactive or insufficiently active patients with intention for behaviour change: the medical practitioner and patient jointly identified an appropriate and feasible intervention for the patient to increase physical activity (professional physical activity counselling, web-based counselling through active-online [34], structured physical activity programmes, self-dependent activities). According to the assessment (inactive or active) the practitioner addressed motivational competencies for increasing or maintaining physical activity behaviour and highlighted the sections in the booklet where appropriate advice was given. The "assignment" to one of these interventions was carried out with a "physical activity prescription" to increase the commitment of the patients.
– Active patients: the physician reinforced the positive behaviour of the patients.

3. Reminder: at the next consultation, the medical practitioner re-addressed the subject.

Figure 1

Schematic illustration of the integrated concept.



Modified intervention procedure

To address potential barriers for this procedure in everyday clinical practice, in addition a less complex option had been developed: medical practitioners select patients conforming to the criteria of the target group (over age of 65 and physically inactive) and refer these to an external institution (in case of the pilot study the Institute of Social and Preventive Medicine of the University of Zurich). This institution sends out the screening questionnaires along with privacy statements, an information letter from the general practitioner and a post-paid reply envelope. The patients send back the completed questionnaires to the external institution for subsequent analysis. Patients indicating risk factors for physical activity receive the physical activity booklet and an invitation to contact their general practitioner in case they wish to increase their activity levels. Their general practitioners are informed of this response. All other patients receive an individually highlighted physical activity booklet with a list of recommended physical activity interventions.

Intervention materials

Based on the experience of the Swiss pilot projects on physical activity counselling in the primary care setting, a general guideline for physicians and the personalizable physical activity booklet were compiled.

For the assessment of physical activity behaviour and intentions for behaviour change in patients, a standardised questionnaire developed by the Federal Office for Sport was used [34]. This instrument classifies the target group into four different categories, based on the Transtheoretical Model of Behaviour Change [34, 35] and the minimum requirements for health effective physical activity [15, 16, 36]. The individual risk factors for an increase of activity level to be considered during counselling were assessed by the standardised Physical Activity Readiness Questionnaire (Par-Q) [37].

Pilot testing and formative evaluation methods

In April 2004 a convenience sample of general practitioners was recruited by postal mail through the "Association of Doctors for the Environment", in addition to a list of physicians working with a commercial nutrition counselling program. Finally twelve out of 550 contacted physicians could be recruited for participation in a formative evaluation of a new physical activity counselling approach (Mean age = 53.94, Std = 7.1, two female and ten male physicians). Most of these participants already offered physical activity counselling. However, they were critical concerning their own effectiveness in doing so and were subsequently interested in learning alternative, structured approaches.

Oral Focus Group Interviews: Initially, two focus groups of 90 minutes were conducted with the selected

twelve physicians to systematically assess the complete intervention procedure from a user perspective. A half-standardised procedure was applied, using a structured interview guide, a professional external moderator and two observers taking very detailed notes. Additionally, the interviews were recorded in order to permit relistening to sections of the interviews in case written notes were not sufficiently clear. Data analysis followed an inductive procedure with an interpretative reductive content analysis [38]: the available focus group material was coded, common themes and issues were extracted, condensed and finally summarised into a focus group report.

Written assessment of the complete intervention procedure: In addition, all focus group participants evaluated the potential acceptance and applicability of the complete counselling procedure and instruments with a structured, written questionnaire. These written assessments were considered in interpreting the focus group results.

Pilot-Testing of the modified intervention procedure: In three medical practices of the recruited physicians the feasibility of the above described modified intervention procedure was tested in the field. The physicians chose a convenience sample of patients whom they assessed as physically inactive according to previous visits in their practice. A total of 55 screening instruments were sent to patients, whereof 38 were returned (return rate 69%).

The pilot test was evaluated by sending a written follow-up questionnaire to these 38 participating patients, which was returned by 28 of them (74%).

Evaluation results and recommendations

The purpose of the present formative evaluation was not to generate a consensus between the physicians with respect to their statements. It was more important to obtain an overview of the range of perspectives among physicians regarding physical activity promotion in the primary care setting. Nevertheless, unless stated otherwise, the following condensed results reflect the opinions of the large majority of the participating physicians.

Strengths and weaknesses of the primary care setting for physical activity counselling

All the physicians perceived the medical practice as a therapeutic setting and viewed their role in physical activity promotion primarily as a therapeutic measure in case of existing risk factors (secondary prevention) or symptoms (tertiary prevention). There was still little routine of physical activity counselling as primary prevention. Nevertheless, having face-to-face contact was considered to be a clear strength of physicians and could be used as a key for patient motivation if the individual situation of the patients and their active participation are considered. Corresponding to the opinions of most of the physicians, physical activity counselling in primary care faced several obstacles: time pressure, personal obstacles of the physicians or lack of patient interest [25].

Target group of physical activity counselling

From the point of view of the physicians, the primary care setting could be suited for addressing the issue of physical activity in regular patients with an increased risk. Furthermore, according to the physicians' view, for sporadic patients coming selectively for a check-up or with an urgent problem, physical activity counselling procedures could have a preventive function. Although there was some concern about addressing these patients without request, others counter argued that there are routine risk factor assessments in other medical areas as well, resulting in no clear majority opinion. According to most participating physicians, providing regular reminders and structured standards for a counselling procedure to physicians was believed to facilitate a broader dissemination.

Procedure of physical activity counselling

According to a majority of the physicians a structured procedure in the medical practice should be adaptable to the individual mode of physicians. Thus, both the complete and the modified intervention approaches should be offered – but still need to be further simplified. An improvement suggested by some of the physicians would be the display of the questionnaires in the waiting room with an attached information sheet. The delegation of the counselling to an external expert was seen as controversial by most of the physicians. It could save time and setting up follow-up consultations becomes more feasible. However, patients could feel rejected. Due to this a majority of the physicians emphasised that financial compensation for the counselling by physicians as well as for the recommended intervention measures (e.g., professional physical activity counselling) needs to be clarified. Finally, almost all physicians considered physical activity promotion alone as too specific. They preferred an integrated, multidimensional prevention approach in primary care [25].

Application of screening instruments

Generally, routine application of a questionnaire for an assessment in the medical practice was thought to be unusual. Although the questionnaire was considered useful for assessing the physical activity behaviour of their patients, most physicians preferred to pose such health status and risk related questions themselves. The instruments need to be adjusted to the age and social context of the patients. Additionally, the physicians rated the target level used in the physical activity questionnaire as too high for inactive and elderly persons. This could discourage patients. As an alternative, patients could fill out a physical activity log.

Regarding the modified approach where the questionnaires and physical activity booklet were sent to the patients' home, two-thirds of the patients who returned the evaluation questionnaire rated the approach as good, one-third as rather good.

Intervention materials

The vast majority of the physicians clearly rated the physical activity booklet as being a useful tool for awareness raising and in depth counselling [21]. They suggested that depending on the routine of the physicians and patient preferences it could be actively used or merely distributed in the waiting room. Overall, both physicians and patients positively rated content, language, and design of the booklet. However, there were discrepancies with respect to the physical activity recommendations contained in the booklet. Whereas all the physicians evaluated the recommendations as very suitable for everyday application in elderly patients, a majority of the patients questioned the practical application, as some examples were not appropriate and content was hard to understand. According to the physicians, the booklet needed further improvement. The patients should be offered the possibility for self-evaluation and individual control of success, as well as specific behaviour guidelines, such as an illustrated exercise program.

Regarding the physical activity interventions patients could be referred to, physicians recommended an exhaustive list, which should be compiled by both patients and experts. A list of specific local physical activity offers and everyday physical activity recommendations could facilitate the counselling process. All the physicians positively rated a prescription as an established and accepted tool in medical practice, which could be applied to physical activity as well. However, they cautioned that a prescription raised expectations of the patients that incurring costs were covered by the health insurance.

Discussion

The present study aimed to test both a procedure and information materials developed for large scale physical activity promotion in the primary care setting for patients older than 65 years. While the physicians generally thought the procedure was feasible and the materials were excellent, they had reservations about the systematic use of questionnaires and they felt that the procedure should be further simplified and adaptations for use in routine medical practice should be possible. The interviewed medical practitioners also recommended that physical activity should be integrated into a multidimensional health promotion approach including physical activity, nutrition, stress, tobacco and alcohol. Both physicians and patients made specific recommendations for the adaptation of the communication material.

As an alternative approach, questionnaires were sent out, received and translated into recommendations by an external institution and only the addresses of patients were made available by the general practices. This approach was well accepted by the patients.

The study also confirmed that time and financial compensation are important factors for medical health counselling. A recent survey of 500 residential physicians showed that more than half of the respondents would engage more in primary prevention if the financial rewards were better [39, 40]. Almost half of the respondents think that having more time could increase the importance of prevention in primary care.

The need for more user-friendly procedures and materials as well as the specific recommendations of the study participants have already been considered, a further version of the protocol has been successfully tested in general practices in the French speaking and in the German speaking part of Switzerland [41, 42] and large scale implementation is planned as part of the programme on diet, physical activity and health in the Canton of Vaud in 2009.

The approach of a delegated screening and counselling process deserves further consideration, particularly as it has been used successfully in geriatric approaches [14]. It minimizes the workload for the general practices and could even reach patients not regularly consulting their physician.

The integration of physical activity promotion within a broader concept of health promotion at the primary care practice is promising because it allows physician and patient to choose the most important issue in a tailored way [43]. Thus, the Swiss College of Primary Care Medicine is currently developing a "health coaching" programme which integrates counselling for the most important health behaviours (physical activity, nutrition, overweight, alcohol, smoking, coping with stress). It will provide efficient instruments and instructions to physicians to contact and counsel patients with risk behaviour [44, 45]. One potential limitation of the study with respect to representativeness is the relatively low involvement rate of the practitioners. However, this study did not have the goal to quantitatively assess the acceptance of the proposed physical activity promotion procedure. Instead, it was intended to qualitatively assess its feasibility and to identify a range of potential supporting and hindering factors for the future advancement and implementation of such an approach. Stewart, Shamdasani, & Rook

(2008) report that small numbers in focus groups are common as it is difficult to recruit participants for such a time consuming assessment. On the other hand, they note that focus groups provide rich data from a group of people in an easy and quick way. Moreover, it is possible to record immediate reactions in a supervised environment [46]. Another possible limitation was that the participating physicians might have been relatively highly motivated on the issue of physical activity promotion. However, it would have been even more difficult to recruit participants with a strong negative attitude towards physical activity into our study. Also, the results show that the participants raised several absolutely critical issues regarding the proposed intervention.

Conclusions

Physical activity promotion through primary care has great potential, but large scale implementation still faces many challenges. This study has addressed some of them by implicating primary care physicians and elderly patients in the evaluation of a model intervention procedure and communication materials. The results of the study have confirmed the need for protocols that can be integrated into routine practice. The concrete indications on how to do this have already been dealt with in other projects. The need to integrate with multidimensional approaches in health promotion and to find solutions for financial recompensation is best taken care of by collaboration with the primary care physicians' professional umbrella organizations. The collaboration of public health professionals with both primary care physicians and their patients demonstrated in the present study is expected to produce more practical interventions with a higher potential for broad dissemination – and thus a larger public health impact.

We want to thank Frithjof Müller for translating and revising the content of this paper. Furthermore, we acknowledge the support of the expert team: Raphael Bize, Stephan Born, Ludo Cebulla, This Fehrlin, Olivier Jeanneret, Anita Märki, Ueli Moser, Oliver Padlina, Denise Rudin, Andreas Stuck, Urs Zanoni.

Correspondence:
Margareta Schmid
Division Public and Organizational Health
Institute of Social and Preventive Medicine
University of Zurich and
Centre for Organizational and Occupational Sciences, ETH Zurich
Hirschengraben 84
CH-8001 Zurich
Switzerland
E-Mail: schmid@access.uzh.ch

References

1 Stuck A, Walthert J, Nikolas T ,Büla C, Hohmann C, Beck J. Risk factors for functional status decline in community-living elderly people: a systematic literature review. Soc Sci Med. 1999;48:445–69.
2 Warburton DER, Nicol CW, Bredin SSD. Health benefits of physical activity: the evidence. CMAJ. 2006;174:801–9.
3 Feinglass J, Thompson JA, He XZ, Witt W, Chang RW, Baker DW. Effect of physical activity on functional status among middle-aged adults with arthritis. Arthritis & Rheumatism. 2005;53:879–85.
4 Visser M, Pluijm SMF, Stel VS, Bosscher RJ, Deeg DJH. Physical activity as a determinant of change in mobility performance: the longitudinal aging study Amsterdam. J Am Geriatr Soc. 2002;50:1774–81.
5 Gregg EW, Pereira MA, Caspersen CJ. Physical activity falls and fractures among older adults: a review of the epidemiologic evidence. J Am Geriatr Soc. 2000;4:883–93.
6 Nguyen TV, Centre JR, Eisman JA. Osteoporosis in elderly men and women: effects of dietary calcium, physical activity, and body mass index. J Bone Miner Res. 2000;15:322–31.
7 Kannus P. Preventing osteoporosis falls and fractures among elderly people. BMJ. 1999;318:205.
8 Physical Activity Guidelines Advisory Committee. Physical Activity Guidelines Advisory Committee Report, 2008. Washington, DC: U.S. Department of Health and Human Services, 2008.
9 Rejeski WJ, Mihalko SL. Physical activity and quality of life in older adults. The Journals of Gerontology Series A: Biological Sciences and Medical Sciences. 2001;56:23–35.
10 Biddle JSH, Fox KR, Boutcher SH. Physical activity and psychological well-being. London: Routledge; 2000.
11 Fox KR. The influence of physical activity on mental well-being. Public Health Nutrition. 1999;2:411–8.
12 Ruuskanen JM, Ruoppila I. Physical activity and psychological well-being among people aged 65 to 84 years. Age Ageing. 1994;24:292–6.
13 Elley CR, Kerse N, Arroll B, Robinson E. Effectiveness of counselling patients on physical activity in general practice: cluster randomised controlled trial. BMJ. 2003;326:793–9.
14 Stuck A, Born S. Gesundheitsförderung im Alter:das Projekt SO!PRA [Health promotion for the elderly: the project SO!PRA]. Managed care. 2001;1:28–31.
15 American College of Sports Medicine Position Stand. The recommended quantity and quality of exercise for developing and maintaining cardiorespiratory and muscular fitness and flexibility in healthy adults. Med Sci Sports Exerc. 1998;30: 975–91.
16 US Department of Health and Human Services. Physical activity and health: a report of the Surgeon General. Pittsburgh: PA; 1996.
17 HEPA. Gesundheitswirksame Bewegung ein Grundsatzdokument vom Bundesamt für Sport BASPO Bundesamt für Gesundheit BAG Stiftung 19 Schweizerische Stiftung für Gesundheitsförderung und dem «Netzwerk Gesundheit und Bewegung Schweiz»; 2004.
18 BfS Bundesamt für Statistik. Schweizerische Gesundheitsbefragung 2002 Erste Ergebnisse [Swiss Health Survey 2002. First results]. Bundesamt für Statistik Neuchâtel; 2003b.

19 Bundesamt für Sport BASPO. Bundesamt für Gesundheit BAG Gesundheitsförderung Schweiz Netzwerk. Gesundheit und Bewegung Schweiz Gesundheitswirksame Bewegung. Ein Grundlagendokument [Health-effective physical activity Basic principles] Magglingen: BASPO; 2006.
20 Eastabrooks PA, Glasgow RE, Dzewaltowski DA. Physical activity promotion through primary care. JAMA. 2003;289: 2913–6.
21 Marcus BH, Goldstein MG, Jette A, Simkin-Silverman L, Pinto BM, Milan F, et al. Training physicians to conduct physical activity counselling. Prev Med.1997;26: 382–8.
22 Schmid M, Wang J. Für das Schweizer «Future Patient» Forschungsteam: Der Patient der Zukunft: Das Arzt-Patienten-Verhältnis im Umbruch – Neue Rollen von Patienten und Leistungserbringern [The future patient: the physician-patient relationship in change – new roles of patients and care providers]. Schweiz Ärztezeitung. 2003;84:Nr 41.
23 Leuenberger P, Longchamp C. Was erwartet die Bevölkerung von der Medizin? [What does the population expect from medicine?] In: Stauffacher W, Bircher J. Hrsg. Zukunft der Medizin Schweiz. EMH Schweizerischer Ärzteverlag AG Basel; 2001.
24 Märki A, Bauer GF, Angst F, Nigg CR, Gillmann G, Gehring TM. Systematic counselling by general practitioners for promoting physical activity in elderly patients: a feasibility study. Swiss Med Wkly. 2006;136:482–8.
25 Bize R, Cornuz J, Martin B. Opinions and attitudes of a sample of Swiss physicians about physical activity promotion in a primary care setting. Schweizerische Zeitschrift für «Sportmedizin und Sporttraumatologie». 2007;55:3 97–100.
26 King AC, Rejeski WJ, Buchner DM. Physical activity interventions targeting older adults: A critical review and recommendations. Am J Prev Med. 1998;15:316–33.
27 Moeller J. Sport im Alter. Auswirkungen von Sport auf die Gesundheit Erwachsener ab 50 Jahren: eine Meta-Analyse [Exercise in late life. Effects of exercise on healthy adults older than 50: a meta-analysis]. Sportwissenschaften. 1999;29: 440–54.
28 Goldstein MG, Pinto BM, Marcus BH, Lynn H, Jette AM, Rakowski W, et al. Physician-based physical activity counselling for middle-aged and older adults: a randomized trial. Ann Behav Med. 1999;21:40–7.
29 NSW Health. The active practice project: A controlled trial of physical activity promotion in general practice. State Health Publication No: HP 99110: NSW Department of Health; 1999.
30 Eden KB, Orleans CT, Mulrow CD, Pender NJ, Teutsch SM. Does counselling by clinicians improve physical activity? A summary of the evidence for the US Preventive Services Task Force. Ann Intern Med. 2002;137:208–15.
31 Jimmy G, Martin BW. Implementation and effectiveness of a primary care based physical activity counselling scheme. Patient Education and Counselling. 2005;56:323–31.
32 Märki A, Bauer G, Conca-Zeller A, Gehring TM. Transtheoretical model-based exercise counselling for older adults in Switzerland: quantitative results over a 1-year period. Social and Preventive Medicine – International Journal of Public Health. 2006;51:273–80.
33 Glasgow RE, Vogt TM, Boles SM. Evaluating the public health impact of health promotion interventions: The RE-AIM framework. Am J of Public Health. 1999;89:1322–7.
34 Martin-Diener E, Thüring N, Melges Th Martin BW. The Stages of Change in three stage concepts and two modes of physical activity: a comparison of stage distributions and practical implications. Health Educ Res. 2004;19:406–17.
35 Martin BW. Physical activity related attitudes, knowledge and behaviour in the Swiss population: comparison of the HEPA Surveys 2001 and 1999. Schweiz. Schweiz Z Sportmed Sporttraumatol. 2002;50:164–8.
36 Prochaska JO, DiClemente CC, Norcross JC. In search of how people change. Am Psychol. 1992;13:39–46.
37 American College of Sports Medicine ACSM, American Heart Association AHA. Joint position statement: recommendations for cardiovascular screening, staffing, and emergency policies at health/fitness facilities. Med Sci Sports Exerc. 1998;30: 1009–18.
38 Bos W, Tarnai C. Content analysis in empirical social research. Int J Educ Res. 1999;31:659–71.
39 Henke R, Kunstmann W. Gesundheitsberatung als ärztliche Aufgabe [Health counselling as medical task]. Präv Gesundheitsf. 2006;1:115–20.
40 Amhof R. Ärzte kaum präventiv tätig [Physicians are hardly preventively active] Gesundheitsmonitor Bertelsmannstiftung; 2006.
41 Bize R, Surbeck R, Padlina O, Peduzzi F, Cornuz J, Martin B. Promotion de l'activité physique au cabinet médical: Où en sommes-nous en Suisse? Rev Med Suisse. 2007;3:2731–6.
42 Bize R, Surbeck R, Padlina O, Peduzzi F, Cornuz J, Martin B. Promotion of physical activity in the primary care setting: The situation in Switzerland. Schweiz Z Sportmed Sporttraumatol. 2008;56(3):112–6.
43 Rootman I, Goodstadt M, Hyndman B, McQueen D, V Potvin L, Springett J, Ziglio E. Evaluation in health promotion – principles and perspectives. WHO Regional Publications European Series No 92 WHO: Copenhagen; 2001.
44 Neuner-Jehle S, Grueninger U, Hoesli R ,Schmid M, Somaini B. A multidimensional health promoting counselling program in primary care setting: "Coaching Your Health". Oral presentation EUPHA 14th European Conference on Public Health Montreux; 2006.
45 Gesundheitscoaching: Förderung von gesundheitsrelevanten Verhaltensweisen in der Arztpraxis. Bundesamt für Gesundheit (BAG). [Health coaching: promotion of health-relevant behaviours in the practitioners' practice. Federal Office for Health]. http://www.bag.admin.ch/tabak_praevention/00879/00886/04830/index.html?lang=de
46 Stewart DW, Shamdasani PN, Rook DW. Focus Groups: Theory and Practice. SAGE: 2006.