European Journal of Public Health, Vol. 15, No. 6, 569–575

doi:10.1093/eurpub/cki045 Advance Access published on July 28, 2005

Attitudes and practices of physicians and nurses regarding physical activity promotion in the Catalan primary health-care system

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Background: In Catalonia a high percentage of the population remains inactive. General practices are an ideal setting to advise on physical activity (PA). However, there is a lack of evidence regarding practices, barriers and predictors of such promotion in the Catalan primary health-care system. This study set out to establish descriptive baseline data for PA promotion in Catalan general practices, and to explore the experiences of doctors/nurses in promoting PA in their day-to-day professional lives. **Methods:** A mixed-method approach was adopted. A survey was conducted with 245 physicians/nurses (58% response rate). Subsequently, focus groups ($n = 5$) and semi-structured interviews ($n = 7$) were conducted with 18 physicians and 15 nurses. After coding for important themes, the final interpretation was confirmed by contributors. **Results:** Eighty-eight percent of physicians/nurses promoted PA at least infrequently. However, work conditions were perceived as unfavourable, with the main barriers being lack of (i) time, (ii) training and (iii) protocols. Qualitative data showed that PA promotion was opportunistic, focused on selected patients, used generalized messages and was highly dependent on personal interests. Regular promotion was encouraged by direct experiences of the benefits of regular exercising, knowing patients well, being supported by medical colleagues and creating links with other community institutions. PA promotion was especially hindered by seeing PA promotion as a secondary task, and patients ignoring recommendations. **Conclusions:** PA promotion in Catalonia remains to be integrated into practice consultations. Therefore, strategies should be developed within public health. Using a mixed-method approach provided a broader range of evidence than most studies, which rely on quantitative methods.

Keywords: Catalonia, health promotion, physical activity, primary care, Spain

Sedentary behaviour is one of the strongest risk factors for many chronic diseases and conditions, including coronary heart disease, hypertension, diabetes mellitus type 2, osteoporosis, colon cancer, depression and anxiety.[1] Despite these benefits, 65% of adult Catalans are inactive.[2] Inactivity is also more prevalent in Spain than the rest of Europe.[3] Furthermore, obesity and diabetes mellitus are increasing in the Spanish and Catalan populations.[4,5] In this context, a reduction in sedentary lifestyles will have beneficial effects on sedentary-related diseases and will reduce future health-care expenditure.

With inactivity a major public health problem, the medical community is searching for effective solutions to prevent these costly and deleterious health consequences.[6] Non-pharmacological, behavioural interventions may be more cost-effective and safer than the alternatives,[7] and encouraging primary care health professionals to promote physical activity (PA) is one feature of this approach.[1] General practice in Catalonia is an ideal setting to identify sedentary adults and advise on PA, as 87.8% of adults visit a physician at least once a year.[8]

Official documentation also identified the primary care setting as central to increasing PA levels. The *Framework Document for the Elaboration of the Health Plans of Catalonia* emphasized that 'by the year 2000, 50% of physicians in primary care should promote physical activity to patients'.[9] However, there is a lack of evidence regarding the levels of PA promotion. Furthermore, the practices, barriers and personal behaviours that have been identified as predictors of promotional intensity in other westernized public health services[10–14] remain unexplored.

The purpose of this study was to establish descriptive baseline data for PA promotion practices in the Catalan primary care setting, and to explore physicians/nurses' lives as they promote PA in their day-to-day professional life.

Methods

Clinical practice reflects elements of both the subjective experience of the individual in the context of the growing evidence base provided by controlled experiments.[15] Given that most evidence in medical sciences has traditionally been number-based,[16] this has overriden essential elements of clinical interaction such as opinions and experiences.[17] Therefore, there is a need for experience-evidence in day-to-day life of working with patients. In this understanding, a mixed-method approach allows researchers to unify both types of evidence.[18] First, quantitative methods provided number-based information on current PA promotion practices and barriers. Subsequently, focus groups and semi-structured interviews provided experience-based information. Throughout, priority is given to the qualitative study, in the need to establish important daily concerns of staff (figure 1).

Survey

The survey aimed to describe (i) current self-reported promotion practices, (ii) the perceived priority of this promotion, (iii) the perceived compatibility of work conditions within general practices, (iv) perceived barriers, and (v) physicians/nurses' stages of change for personal PA behaviour.

A 23-item questionnaire was developed, based on published literature.[19–22] To establish content validity, expert researchers scrutinized the questionnaire items, which were based on

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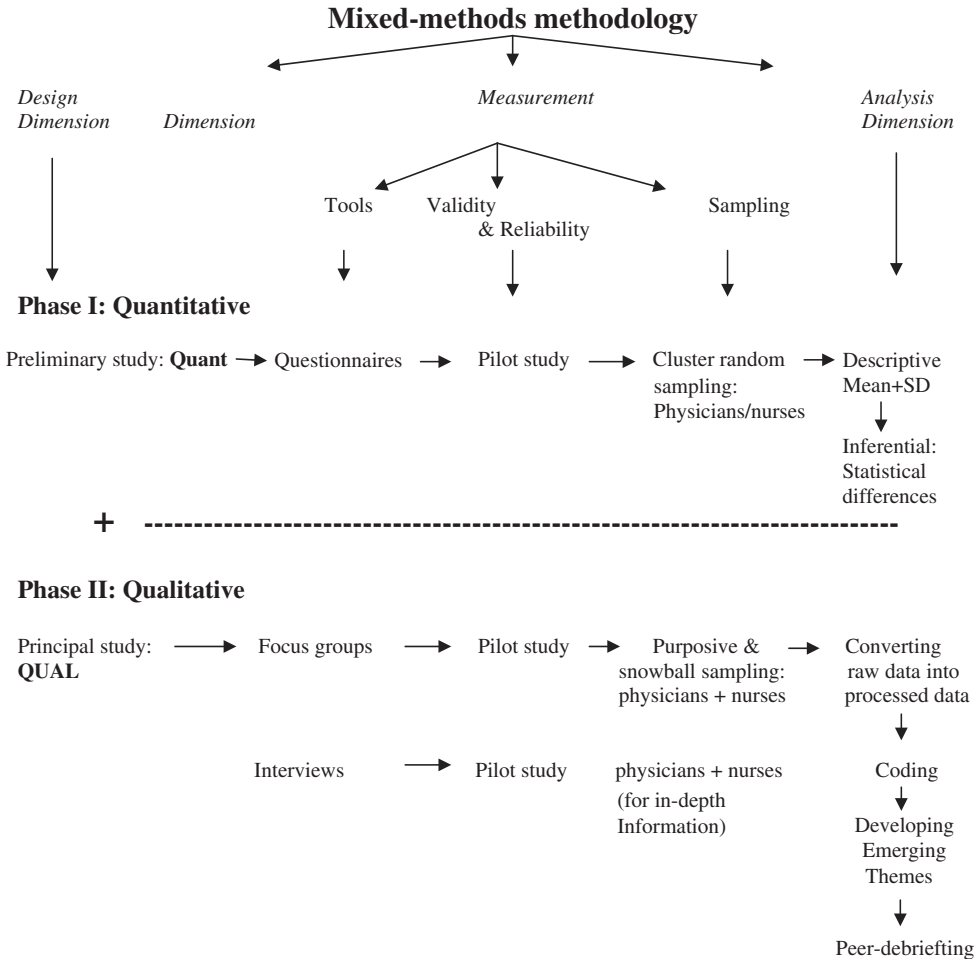

Figure 1 Flowchart of the research design

previous findings.[23] Finally, doctors not involved in the study confirmed that the device was understandable, readable and of manageable length.[24] Test–retest reliability ($n = 10$) over 7 days ranged from $r = 0.40$ to 0.75. Response options were Likert scales (range 1–5), where 1 = completely unfavourable and 5 = extremely favourable.

The study population were physicians/nurses of primary care medical teams working in general practices managed by the Catalan Institute of Health (ICS). These teams were stratified according to the seven Health Regions of the Catalan Health System. At least two teams were randomly selected from each region, giving a final pool of 19 teams. A cluster sample of medical teams was obtained from each stratum. A sample of 300 physicians and nurses was considered adequate to provide a sampling error of 2% to most research questions. A response rate of 70% was the target, allowing for a dropout of 30%, giving a final sample size of 420.

The Director of the primary health-care system of the ICS endorsed the study. Questionnaires were sent to Directors of each primary care medical team, requesting circulation of the confidential questionnaires to all team members.

Frequency and χ^2-tests were conducted to assess percentages responses, differences in proportions between physicians and nurses, and associations between the different stages of change for PA and each variable.

Qualitative study

Focus groups were conducted with physicians and nurses to understand the framework for PA promotion in primary care and generate relevant insights, hypotheses and ideas that were perceived to be important. Semi-structured interviews corroborated data from the focus groups and provided more in-depth personalized information.

A common guide, based on the Stages of Change theory and the Decisional Balance concept,[25] was developed to structure the focus groups and interviews. In this literature, individuals change through stages (precontemplation, not changing and no intention of doing so; contemplation, thinking seriously about changing soon; preparation, infrequent changes in behaviour; action, regular changes that were started only recently; and maintenance, regularly and frequently change behaviour for >6 months). Changing reflects the balance of two dimensions of decision-making: the benefits (pros) and costs (cons) of changing. This approach has been adapted to address professional PA promotion behaviour of doctors and nurses in the UK.[12,21]

First, the guide was used to identify participants' current practice. Then, active promoters were asked about what made them start promoting PA or what could make them stop. Non-promoters were asked about what was stopping them from promoting PA, even when they were interested in doing so.

Using a theoretical sampling strategy,[26] information-rich participants were selected from different general practices, based on four criteria: (i) geographical area (urban versus rural versus suburban), (ii) private versus public management, (iii) practices embodied within the 'new' model of primary care versus the 'old' model, and (iv) practices adhered to preventive activities programmes versus non-adherers.

Five directors of primary care teams were contacted on behalf of the Catalan Society for Family and Community Medicine, which supported the study. This enhanced access to 'key informants'. Verbal consent was obtained from each director for conducting focus groups and interviews with physicians/nurses

from general practices in their divisions. Further 'differential' cases were identified through the data gathering process and were included in the sampling structure.

Interviews and focus groups were tape-recorded, fully transcribed and coded using the sensitizing themes of stage of change for PA promotion[21] and the decision balance concepts of pros and cons of changing.[25] Findings and interpretations were sent back to selected participants for verification (see figure 1 for a flowchart of the design). Several strategies were used to ensure rigour in the qualitative section of the study. These variously addressed the credibility, confirmability, dependability and transferrability of both analysis and interpretation:[26]

(i) Piloting focus groups and interviews.
(ii) Data gathering was based on different participants, at different times and at different places to ensure diverse experiences and levels of conformity.
(iii) Using a comparative method established interactions, which were assessed in successive focus groups and interviews.
(iv) Searching for deviant cases helped to test 'discoveries'.
(v) Member checking.
(vi) Integrating different cases and contexts to analyse the relations under study and improve generalizability.

Results

Survey

A response rate of 58% ($n = 245$), 145 physicians and 92 nurses, was obtained. Table 1 shows the mean ages, and percentage by gender and occupation. A majority of staff (88%, $n = 214$) reported promoting PA in practice consultations (table 2). More nurses (93.5%) than physicians (84.1%) reported doing this. Table 2 shows that most staff were, at best, infrequently active in their personal lives. Over 70% of physicians and nurses perceived physical activity promotion as 'very important'.

Physicians (55%) and nurses (46.1%) felt that work conditions in general practices were 'unfavourable' for promoting PA. The way the medical team was organized was also perceived to be unfavourable for promotion (62.5%), while PA promotion was viewed as unimportant within the current political climate (69%). Not having a protocol was an important inconvenience (55%). In addition, physicians/nurses reported having 'very little' time (60.5%) and 'very limited' training in counselling skills for PA promotion (64%).

Stage of change for personal PA was significantly associated with current practices and perception of barriers ($\chi^2 = 15.16$, $P < 0.05$). 'Personally active' staff (action or maintenance stages, 24.3%) reported promoting PA to 'all' patients (table 2). In contrast, the majority of 'personally inactive' staff (precontemplation or contemplation stages, 49.8%) reported promoting PA with 'few' of their patients (table 2). More of the 'personally active' staff reported a higher importance of PA promotion and for having a higher theoretical knowledge for doing this than the 'personally inactive' staff (table 2).

Table 1 Sample occupation, age and gender

	Mean age, years (SD)	*n* (%)		
		Males	Females	Missing
Physicians ($n = 145$, 59.2%)	41.94 (8.46)	76 (52.4)	64 (44.2)	5 (3.4)
Nurses ($n = 92$, 37.6%)	41.91 (7.31)	10 (10.9)	81 (88)	1 (1.1)

Qualitative study

Eighteen physicians and 15 nurses volunteered to participate. Each gave informed consent verbally for the tape recording contributions. Confidentiality was promised. Seven semi-standardized interviews were carried out in venues chosen by individual contributors. These lasted 30–120 min. The five focus groups ranged from five to 12 participants and were conducted until the moderator could predict how the participants were going to respond.[27]

Physicians/nurses identified different themes that described the current situation of PA promotion in the Catalan primary care system. Current practice was described as (table 3):

- opportunistic owing to a perceived 'shortage' of time and 'rushing to fit everything into practice consultations';
- having different levels of delivery (non-promoters, sporadic-promoters and regular-promoters), which were subject to personal interest in PA;

Table 2 Responses by stage of change for personal PA behaviour

Stage for personal behaviour (*n*)	Currently no PA promotion (%)[a]	Low priority of PA promotion (%)[b]	Incompatibility of work conditions (%)[c]	Lack of time (%)[d]	Lack of theoretical knowledge (%)[e]	Lack of training in counselling (%)[f]	Lack of standard protocols (%)[g]
Precontemplation (45)	12	48*	70	65	58	75	42
Contemplation (71)	9	38*	65	63	46	70	40
Preparation (60)	6	15	60	60	35	56	50
Action (27)	1*	8	63	55	46*	65	58
Maintenance (32)	0*	18	50	55	36*	42	39
Missing (10)							

a: Currently do not promote PA
b: Scores of 1 (completely unimportant) or 2 (unimportant)
c: Scores of 1 (completely unfavourable) or 2 (unfavourable)
d: Scores of 1 (no time at all) or 2 (not enough time)
e: Scores of 1 (no knowledge at all) or 2 (not enough knowledge)
f: Scores of 1 (no training at all) or 2 (not enough training)
g: Scores of 1 (extremely important inconvenience) or 2 (very important inconvenience)
*χ^2 differences, $P < 0.05$

Table 3 Quotes describing current promotion practices

Opportunistic
'To promote physical activity has a lot to do with the capacity of the doctor to prioritize what is the most important, will I do this or that. This is not possible with other things.'
Subject to personal interest of staff
'In my case, its something personal [attending exercise classes]. I believe in exercising, and I like it, I say this to myself a lot. I also say it quite frequently and in different moments when I am in the clinics.'
Non-priority task
'When you give a series of treatments you say: no smoking, watch fat and cholesterol, take your medicine and do some exercise, and maybe we should be conscious that to do exercise should be put at the top of the list.'
Physical inactivity never regarded as a health problem in its own right
'I recommend doing exercises for specific treatments, such as obesity, hyperlipidaemia, high cholesterol, diabetes and above all for elderly people that are lonely, or live alone. The action of going out and walking is useful for them to meet people and spend sometime outside in the sun, this action alone motivates them.'
Absence of structured and common criteria
'Only small programmes exist including in the protocols, exercises for diabetics or patients with heart problems, exist, but its not a common project, but in part. This means, that you read it and they are sentences, right? Exercise should be done, should but it doesn't say what type of exercise. Anyway, it's there like an invitation or an indication but there is no determined structured project on how to do it.'
Over-generalized, over-simplified, repetitive and non-individualized messages
'Let's see if part of the treatment for diabetics is exercise, very well. You do exercise, right? You have to walk more because you are overweight! Okay! Next!'
'The prescription isn't an individual prescription. We don't ask the patients: What do you like? Have you ever done any exercise? Do you exercise regularly? What exercises do you do?'
Isolated from other agencies in the community
'There is no need to organize anything, but if we had access, the same as when you direct the patient to a digestive specialist, when you have a problem that we could ... If you think that that person will benefit from that program [of physical activity].'

- not being a priority compared with other consultation tasks; where it did occur, patients had chronic and specific health problems, especially diabetes and obesity;
- not recognizing inactivity as a health problem in its own right;
- lacking a structured approach and common criteria to guide delivery;
- based on using over-generalized, over-simplified, repetitive and non-individualized messages;
- isolated from other PA agencies in the community such as sports/fitness centres, community centres and neighbourhood associations.

Physicians and nurses held distinctive attitudes toward PA promotion. Two stage clusters were distinguished: 'Non-promoters', which included contemplators, and 'promoters', which included episodic (i.e. in the preparation stage) and regular (action and maintenance) promoters.

Non-promoters: contemplators

Staff reported that they would promote PA if it was a 'non-time-consuming task'; they felt they had to fit it into already time-pressed conditions. PA would be promoted when staff could see a clear link to specific body diseases. Recent, first-hand experiences of the positive health benefits of regular PA encouraged staff to consider it for their patients (table 4).

Several factors (cons) undermined personal enthusiasm for taking the first steps in promoting PA. PA was rarely seen as a priority within 5-min consultations. This placed all preventive activities in a 'second division' of optional approaches. Lack of official support and being under-resourced supported these beliefs. Lack of consensus statements and official protocols were cited as further evidence for this argument. There was also a sense that patients did not want PA promotion; they preferred cure approaches. Furthermore, any energy for changing professional practice was absorbed by coping with the attentions of the pharmaceutical industry. There was no rival advocate for PA promotion (table 4).

Episodic promoters: preparers

Episodic promoters felt competent and self-confident in promoting PA. They described having 'basic knowledge of PA and health benefits', and having appropriate training/skills. These skills often developed through personal involvement in exercising. Promotion often began tentatively and with selected patients who were well known to the staff, or who staff predicted would react favourably. 'Seeing patients over several sequential appointments' helped to establish the readiness of the patient for PA promotion. Support from medical colleagues helped to initiate PA promotion within patient consultations (table 4).

Several cons discouraged staff from moving to more regular and frequent promotion. Not having the 'right' answer to the two most common barriers that patients reported for being more active (lack of time and money) was a problem. All staff felt they lacked knowledge and training in 'PA for pathologies', 'PA prescription' and 'behaviour change strategies'. In the absence of formal training, staff typically developed only a modest range of PA messages. Few of these messages had direct relevance to patient health status and circumstances. This made it difficult for staff to make the PA recommendation directly relevant to the patients and led to patients ignoring PA recommendations. Lack of information further discouraged staff when they wished to help specific patients, especially obese people wanting to lose weight (table 4).

Active promoters

Active promoters were proactive in creating links with other community institutions, including neighbourhood associations, fitness centres, community centres, schools and city councils. This capitalized on the pre-existing, specialist physical resources

Table 4 Quotes from Non-Promoters, Episodic And Active Promoters of physical activity

Pros	Cons
Non-time-consuming task	Preventive activities perceived as a second division of optional approaches
'It's no effort for me to take a minute and say: it will do you good to do a bit of exercise, it doesn't take a lot of effort and its two seconds.'	'The doctor in general is more concerned with whether the patient smokes or has high cholesterol than if the patient does any exercise.'
Clearly linked to specific diseases	Lack of official support
'I really think that professionals' attitudes towards this [PA] depends on what has been said in the programmes for diabetics and obesity.'	'If there is someone who voluntarily prescribes a little exercise its because they want to, and on their own initiative.'
Personal benefits from regular physical activity	Lack of demand from patients
'but if you do physical activity and feel good then you will recommend it to others. What's important is that they have lived it ... exactly, who has lived it, even if it was in their childhood.'	'... the patient who comes here wants you to give a treatment or to diagnose something, they are not open to the promotion of exercising, it has to be you who insists on this.'
Having developed basic knowledge and training skills	Pharmaceutical industry competes with physical activity promotion
'If there is a doctor that has some knowledge of this is, because they have taken an interest in something, because as such, there is no subject of exercising for health.'	'... because we are all motivated through the pharmaceutical industry to give prescriptions ... because there is no interest, from any industry to obtain any benefits [from promoting physical activity], you have to look for it, if you are interested.'
Promoting to selected patients	Deficient knowledge and training
'I take time to explain the advantages of exercising to people who really listen and the people that think I am a stupid, I don't tell them to do exercises ...'	'I think the doctor, except with few exceptions, don't sufficiently know the benefits of physical activity, or the disadvantages, nor do they know how to prescribe it regularly.'
Support from medical colleagues and working in consensus	Irrelevance of our messages to patients
'The three assistants and the three directors of the team and I, while I was there, I was the person who tried to maintain the common idea and all the history [of promoting activity].'	'In general, it's OK to say walk as much as you are able, OK? But this is not enough. I think that we are trying to change this idea but, we aren't worried enough about promoting physical activity.'
Creating links with other community institutions	Patients ignore recommendations
'Social security prescribes a lot of things but doesn't promote gyms. And that could be watched over by social security doctors, specialized exercise staffs, and doctors who liked the subject.'	'A lot of people when you tell them to exercise daily, they say you must be joking, they have to work, and nowadays working full time is very tiring.'
Development and implementation of own structures for delivery	Difficulties in accessing to physical activity promotion training
'I have dealt with time constraints, I have made this protocol clear, I have believed 100% in it, and I met a nurse in my team who shared my ideas. You have to choose people who believe in exercising.'	'There are few conferences and workshops and you have to pay to attend them. So, if you want something you have to fight for it.'
	Difficulties overcoming patients' barriers
	'Yes, because they say that they do enough exercise at home or at work, and that the problem is that they have no time.'

and was based on an acceptance that community-based specialists have more appropriate skills in PA promotion. Active promoters felt highly trained to promote PA. This resulted from self-teaching, which helped to achieve a better delivery. Delivery was individualistic and developed to satisfy personal models for 'successful' interventions (table 4).

The main cons for active promoters were the perceived difficulties in accessing PA promotion training. Not having enough space to address the PA problems of individual patients, such as organizing PA programmes, was a further concern (table 4).

Discussion

This study explored the current situation of PA promotion in the Catalan primary health-care system. The study is the first to: (i) target randomly selected general practices independently of any preventive programme, not only in Catalonia, but throughout Spain; (ii) use a qualitative approach to explore the concerns and practices of professionals through an established model of behaviour change; and (iii) adopt a mixed-method approach. This has provided a broader range of evidence than most studies, which typically rely on quantitative methods. These issues relate

to the practicalities of promoting PA in everyday primary care, to the theoretical relevance of the stages of change perspective to professional practice, and also to more generalizable issues regarding the promotion of PA within general practice. The process generated three specific main findings.

The first finding was that a high percentage of staff reported promoting PA and felt that this was an important task. These rates are higher than reported in previous research.[10,19,28–30] This may be due to sampling bias, where the most active promoters completed the questionnaire. The uneven response rates from within individual medical teams (ranging from 10% to 80%, and groups of from 10 to 50 staff) generated higher than expected standard sampling errors for some questionnaire responses. Further studies should explore the frequency of promoting PA, since the focus groups and interviews suggested the dominance of episodic and opportunistic approaches. Consistent with McKenna and Vernon (2004),[12] these studies should also define the specific style and messages within PA promotion.

Second, 'personally active' staff promoted PA more frequently and perceived it to be more important than sedentary staff. As with UK doctors and nurses,[21] physical inactivity behaviour was an important factor in supporting decisions regarding PA promotion in practice consultations. Many 'traditional' barriers were identified, which have been reported in many countries. These include lack of time, short consultation time, lack of education, training and lack of institutional support.[19,31–33] With such consistency, there appears to be a generic perception of a hostile context for promoting PA in primary care settings.

The third main finding was that PA promotion was not fully integrated into daily consultation routines. Focus groups and interviews identified several reasons. First, physical inactivity only became a concern for most staff when it was clearly linked to a 'medical' health hazard. This is consistent with a recent US study, which showed that recall is heightened when behaviour change recommendations are linked to health states.[34] However, many Catalan staff felt they knew too little about how PA influences most health states, suggesting their training needs. Secondly, the lack of patient-initiated PA discussion matches US evidence showing that almost two out of three of directly observed lifestyle interventions were doctor-initiated.[35] Patients who were unwilling to communicate about health behaviour incurred 22% higher annual medical care costs than those who were,[36] suggesting the need to prioritize the least enthusiastic patients. In Spain these people are more common among the over 65-year-olds, people who are separated or widowed or who have BMI values exceeding 25.[3]

Thirdly, the lack of a protocol that overcomes system barriers prevented many staff from changing the content of their consultations. Thus, most professionals were in the contemplation stage for PA promotion, and were still looking for ways to help them to move into the more active stages. However, regular PA promotion relied on isolated enthusiasts who taught themselves about PA effects.

Compared with previous research, PA promotion in the primary health-care system of other countries is more advanced than in Catalonia. To match the US, Canada, Australia and the UK would require the development and evaluation of PA promotion protocols.[37–47] Furthermore, national guidelines for PA promotion in primary care have been developed in UK.[48]

Overall, contributors sensed that PA promotion in the Catalan primary health-care system was relatively ineffective. There was a strong need for systematic approaches that address the growing number of individuals suffering from inactivity-related conditions. Health policy on PA promotion would be valued where it highlights strategies to integrate PA promotion practices into more primary care consultations. This makes good economic sense, since prospective data showed that health-care costs of active versus inactive over 50-year-olds are reduced by $2200/year.[49]

The study has several limitations. First, we can not ensure that all themes were identified. Secondly, although analytical approaches were adopted to suspend the researchers' views, no criteria can confirm this. Thirdly, only volunteers were represented. Therefore, the study does not claim to have achieved completeness; it is likely to express the 'best it is'.

Future research on PA promotion in primary care can profit from mixing experiential with numerical evidence. This may identify the best approach for promotional effectiveness. PA promotion should target not only physicians/nurses, but also patients and community figures, with a clear specialized role. Further research on PA promotion in Catalonia should (i) develop standardized structured protocols to guide delivery, (ii) co-ordinate primary care with already existing community institutions and specialists, including exercise specialists, and (iii) study the effectiveness of such protocols through intervention studies.

Acknowledgements

We wish to thank all the volunteers who altruistically contributed in the study. We also thank the following for their support of the study: the Exercise and Health group of the Catalan Society for Family and Community Medicine, the Advisory Council on Physical Activity and Health Promotion of the Department of Sanity and Social Security of Catalonia, the General Subdirection of Health Promotion of the Department of Sanity and Social Security of Catalonia, and the ICS.

Key points

- We established descriptive baseline data for physical activity promotion and, explored doctors/nurses' experiences in such promotion in Catalan general practices.
- Work conditions were perceived as unfavourable with the main barriers being lack of (a) time, (b) training and (c) protocols.
- Physical activity promotion was opportunistic, focused on selected patients, based on generalised messages and was highly dependent on personal activity interests.
- Physical activity promotion in Catalonia remains to be integrated into practice consultations. Existing promotional approaches were considered relatively ineffective
- Health policy should focus on integrating physical activity promotion into more practice consultations and search for evidence of effectiveness.

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Received 28 April 2004, accepted 18 August 2004