

Promoting public health by Physical activity on Prescription, with focus on organized exercise

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Background: Insufficient physical activity is a public health problem. Nordic healthcare professionals use physical activity on prescription (PaP) to increase physical activity. **Purpose:** This study aimed to evaluate the effectiveness of PaP that includes organized exercise. **Method:** Prospective data was obtained from four Swedish counties during fall 2009 and spring 2010. The study population comprised 98 patients whose healthcare professional prescribed PaP to prevent or treat disease. Questionnaires administered at baseline, three and six months after initiating PaP evaluated self-reported physical activity levels, adherence, factors influencing adherence, and experience of PaP. **Results:** Although the majority of patients receiving PaP including organized exercise are middle-age women, there are a wide distribution regarding e.g., age, socioeconomic status and reason of receiving PaP. Most participants received initial support from healthcare providers and activity organizers, and most were satisfied with the support they got. Approximately 70% participated in several activities at all measuring points. Although PaP including organized exercise increased activity levels only marginally, sedentary behavior decreased significantly. Six months after initiating PaP including organized exercise, 68% adhered to the prescribed physical activity level. Most participants deemed PaP including organized exercise a good method for becoming physically active. However, there is a need for regularly and longer support. Importantly, individualized instruction, adjusted exercise regimens, and support from other participants provide positive reinforcement. On the other hand, PaP with organized exercise imposes additional costs and decreases flexibility including both time commitment and scheduling constraints. **Conclusion:** Adherence levels to PaP with organized exercise are similar to those achieved by other chronic disease treatments. PaP including organized exercise can decrease sedentary behavior, an important factor in promoting public health in the Nordic countries.

Key words

public health, health promotion, clinical research, Physical activity on Prescription, sedentary behavior.



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Sammanfattning

Bakgrund: Otillräcklig fysisk aktivitet är ett folkhälsoproblem. Nordisk hälso- och sjukvårdspersonal använder Fysisk aktivitet på Recept (FaR) för att öka den fysiska aktivitetsnivån. **Syftet:** Den här studien syftar till att utvärdera effektiviteten av FaR som inkluderar organiserad träningen. **Metod:** Prospektiva data samlades in från fyra svenska län under hösten 2009 och våren 2010. Studiepopulationen bestod av 98 patienter som fick receptet av ordinarie hälso- och sjukvårdspersonal i syfte att förebygga eller behandla sjukdom. Data samlades in via frågeformulär vid baslinje och efter tre och sex månader för att utvärdera självrapporterad fysisk aktivitetsnivå, följsamhet, faktorer som påverkat följsamheten och upplevelsen av FaR. **Resultat:** Även om majoriteten av patienterna som får FaR till organiserad träning är kvinnor i medelåldern, så finns det en stor spridning i ålder, socioekonomisk status och orsak till ordination. Huvudparten av patienterna hade till en början fått stöd av sjukvården och aktivitetsarrangörer samt var nöjda med stödet de fått. Ungefär 70 % var aktiva i flera aktiviteter vid samtliga mättillfällen. Trots att FaR som inkluderar organiserad träningen endast ökade den fysiska aktivitetsnivån marginellt så minskade den stillasittande tiden signifikant efter sex månader. Följsamheten var 68 % sex månader efter ordinationen. De flesta angav att FaR som inkluderar organiserad träning är en bra metod att bli fysiskt aktiv, men det finns ett behov av regelbundet och längre stöd. Huvudsakligen så stimulerade individuella instruktioner, anpassad träning och stöd från andra deltagare till en positiv förstärkning. Medan nackdelar med att vara aktiv i organiserad träning var kostnaderna och minskad flexibilitet gällande att det både var mer tidskrävande och begränsningar i schemaläggningar. **Slutsats:** Följsamheten är lika hög som till andra behandlingar av kronisk sjukdom. FaR som innehåller organiserad träning kan minska stillasittande vilket är en viktig del i att främja den nordiska folkhälsan.

Nyckelord

folkhälsa, hälsofrämjande, kliniska undersökningar, Fysisk aktivitet på Recept, stillasittande.

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1. INTRODUCTION

1.1 Physical activity and health

Low physical activity is a public health problem. It is classified according to World Health Organization (WHO) as one of the ten most significant risk factors of premature death in the developed world. Insufficient physical activity is closely associated to non-communicable diseases (1). It accounts globally for no less than 22% of ischemic heart disease, 11 % of ischemic stroke, 14 % of diabetes mellitus type two, 16 % of colon cancer and 10 % of breast cancer (2). In Europe, low physical activity is the fifth leading mortality risk. Insufficient physical activity causes 600,000 deaths and 5.3 million disability adjusted life years (DALYs) in the European region every year (3). Low physical activity and unhealthy eating habits lead to economical costs to society which are estimated to correspond to at least 1-2% of Gross Domestic Product (GDP) in the Nordic countries. The trend with unhealthy eating habits and low physical activity in the Nordic countries needs to be stopped. If not it will be a major threat to the welfare and public health in the future (4,5).

There are several physiological effects of physical activity. Through regular physical activity the glucose uptake and insulin sensitivity improve which reduce the risk of diabetes mellitus type 2. In addition the blood lipid balance in the muscle improves, the condition of the blood vessels is enhanced and the blood pressure decreases. Together, they decrease the incidences and relapses in cardiovascular diseases (6-9). Physical activity also decreases body-weight and reduces abdominal fat due to the change in the energy balance (6-8). Several studies show a decreased risk of cancer, particularly breast and colon cancer, among physically active individuals (7). Regular weight bearing exercise reduces the risk of osteoporosis (6-9). The combination of balance training and muscle training weight bearing exercise reduces the risk of falls and fractures in elderly (7). Regular physical activity improves quality of life and reduces the risk of developing depression (6,8,10).

1.2 Definitions

Physical activity is defined as “any bodily movement produced by the contraction of skeletal muscle that increases energy expenditure at basal level” (11).

Exercise is a subcategory of physical activity that is “planned, structured, repetitive and purposive in the sense that the improvement or maintenance of one or more components of physical fitness is the objective” (11).

Health enhancing physical activity means “any form of physical activity that benefits health and functional capacity without undue harm or risk.” The activity can be on a moderate or vigorous intensity and have to be performed on a regular basis (12).

Sedentary behavior has during the last years been separated from low physical activity. It is defined as “activities that do not increase energy expenditure significant above the resting level” (1.0-1.5 metabolic equivalent units) and includes activities such as sleeping, sitting and lying down (13).

Organized exercise is examined in this evaluation. In this case, organized exercise is defined as planned activities, in addition to the daily life activities with an aim to improve health. It includes both facility based exercise as well as exercise outdoors and special home-based programs. The exercise could be individual or group-based.

1.3 Physical activity recommendations

Nordic recommendation for adults, 18-65 years, is; at least 30 minutes of physical activity every day at a moderate to vigorous intensity. The activity should be beyond normal daily activities (corresponding to increase of energy consumption of 150 kcal) (4,6). Moderate-intensity activity is exemplified by a brisk walk and should notably accelerate the heart rate. Vigorous-intensity activity is exemplified by jogging and leads to rapid breathing and increased heart rate. The Nordic recommendations are similar to international recommendations. The American College of Sports Medicine and the American Heart Association recommend 30 minutes of physical activity on a moderate intensity five days a week or 20 minutes of vigorous-intensity activity three days a week. Combinations of these can also meet the recommendations (14). The recommendations are at the lowest suggested level. Both international and national recommendations emphasize the need for 45 to 90 minutes of physical activity on a moderate intensity each day in order to prevent weight gain (4,6,14). There is a positive correlation between physical activity and health. Exceeding the recommendations leads to further reduced risk of non-communicable diseases and disabilities. The health benefit is greater for individuals that increase their activity level from sedentary to moderate, than individuals changing from moderate to active (9).

Recent studies emphasize that activities at a moderate and vigorous intensity have positive effects on our health even when it is divided into short intervals of 10 minutes or more per time. American recommendations of health enhancing physical activity also include activities to maintain or increase muscular strength and endurance. Those should be performed as a complement twice a week (14). Earlier mentioned recommendations involve healthy adults. More specific recommendations are formulated in order to treat various diseases (6).

2. NORDIC AND PUBLIC HEALTH PERSPECTIVE

2.1 Prevalence of physical activity in the population

The level of physical activity is low in the developed world and a large part of the population is not sufficiently physically active (4,15). According to the Nordic Council this can be related to a decrease of physical activity in the daily life. Changed circumstances and development of technology in the society has led to a more sedentary lifestyle. Increased accesses to computers and television, decreased use of non-motorized transportation as well as fewer occupations that involve physical activity seem to be important causes. Despite the decrease of physical activity in daily life, more people in Sweden report a higher frequency of exercise during leisure time. However, there are large social differences (5).

It is difficult to measure physical activity under free living conditions, although there are several methods in use. Examples are questionnaires, accelerometers and logs. They all have their advantages and disadvantages and no single method is able to quantify all aspects of physical activity under free living conditions. Because of the difficulty in measuring, various reports make different estimations of how many individuals in society that are sufficiently physically active. Estimations from the Nordic Council of Ministers and WHO reveal that approximately 50 percent of the population are not sufficiently physical active in order to prevent ill health (2,4). Hagströmer *et al.* showed through an objective evaluation with accelerometers that only one percent of the population is physically active for at least ten minutes three times per day on a moderate level (16). A large European study illustrates that approximately only one-third of the adult population reaches the level considered as sufficiently physically active. The study is based on about 20 European countries. In Sweden 23 % of the adult population reaches the recommended level in comparison to 33% in Denmark and 34% in Finland (15). These results are consistent with a national evaluation in Norway, where 20% of the adult population were estimated to reach the national recommendations (17). Iceland has been struggling to find a good method to measure physical activity level in the population and there is no published data of results from evaluations. Estimations imply that 50% of the adult population reaches the recommended level of physical activity (Personal communication Gígja Gunnarsdóttir, Icelandic National Institute of Public Health, November 3, 2010). Although the difficulties to measure physical activity, questionnaires a feasible method to measure physical activity in a large population (18,19).

2.2 Promoting physical activity in the Nordic Countries

The individuals' choice and responsibility of lifestyle is an important part of the work to improve public health in the Nordic countries. In July 2006, the Nordic governments

made a common Nordic plan of action on improving health and quality of life through diet and physical activity. The plan supports policies and actions in the different countries. The plan includes Nordic ambitions and visions to promote a healthy diet, physical activity and to prevent being overweight. Important parts of the plan are an increased sharing of knowledge, a common effort to identify best practice, and increased scientific cooperation. For physical activity, focus has been on developing supportive environments and increasing the citizens' awareness of the importance of physical activity for health (4,20). The Nordic objective for physical activity is structured with a goal for 2011, "The current trend, where an increasing proportion of adults and children are physically inactive, has been brought to a halt and at best reversed" and a vision for 2021, "At least 75% of the adult population is physically active (moderate intensity) for at least 30 minutes every day." Solutions will primarily be established at local and national levels, but action on a Nordic level is needed to reinforce the importance. If the negative trend with unhealthy eating habits and low physical activity remains, the Nordic governments will introduce relevant legislation in order to promote health (4).

2.2.1 Promoting physical activity in the health care setting

Ottawa charter and the Swedish public health policy emphasize the importance of health care sector working more systematically with integrating prevention and health promotion aspects in their work (20,21)

The health care sector is a key player in promoting health in society. They have an advantageous basis, while approximately 70-80% of the population will have contact with a general practitioner (GP) over a 12 month period (22). This contributes to that the health care sector reaches vulnerable groups, such as the elderly, socio-economically weak and persons on sick leave (23). Another advantage is that people have a great trust for the health care concerning lifestyle issues (24).

Different methods are in use to increase physical activity of individuals. This is done through health counseling, lending of pedometers, theory-based behavioral interventions and supervised training. All these methods have a positive effect on increasing the physical activity level of individuals (25). One method that has increased in use since 2001 within the Swedish health care is Physical activity on Prescription (PaP) (23). This method is used inside and outside Scandinavia. The form of prescription varies across and within different countries, but they include face-to face communication along with written prescriptions for physical activity (26-30).

2.3 Physical activity on Prescription

2.3.1 Physical activity on Prescription in the Nordic countries

There are four countries that use the PaP-method. Sweden and Finland have used PaP since 2001. Denmark and Norway started in 2002 and 2003, respectively (8,23,26,29). Iceland had a pilot project using PaP in one municipality, but has no national use of the PaP-model (personal communication Gigja Gunnarsdóttir, Icelandic National Institute of Public Health, November 4, 2010).

All the existing PaP-models are based on cooperation on a national and local level. The prescription should be adequate and in agreement with the patient. It is based on health counseling and a written recommendation in Sweden, Norway and Finland. In Denmark the physicians refer to special team for further consultation. The consultation is primarily performed by a physical therapist. All patients that could benefit by increasing their physical activity can receive PaP in Sweden, Finland and the Norwegian "Frisklivsresept" model. The Norwegian "Grønn resept" and the Danish PaP-model are more diagnose specific. In Denmark diabetes type 2, the metabolic syndrome or cardiovascular diseases are common reasons, but it varies between different municipalities. The "Grønn resept" only includes non-medicated individuals with hypertension or diabetes type 2 (29-32). Collaboration with local exercise organizers is an important foundation in Sweden and Finland. Individuals exercise at local exercise organizations or in their daily life (30,32). In Denmark and Norway, on the other hand, individuals are to a higher degree involved in special high-intensive programs within the health care sector (30,31,33). It is mainly general practitioners that prescribe physical activity in all countries. In the Swedish model all licensed health care professionals are allowed to prescribe physical activity. The Norwegian "frisklivsreseptet" is special because non licensed health care professionals at the work and social administration can prescribe physical activity (8,23,26,30,34).

2.3.2 The Swedish model of Physical activity on Prescription

All county councils in Sweden use PaP, but there are big regional differences (5). In year 2007, 17,000 prescriptions were prescribed in 17 of Sweden's 21 county councils (24). The Swedish PaP model is based on five corner stones: written prescription, patient-centered counseling, "FYSS", follow-up and collaboration between health care sector and exercise organizations (Figure 1) (35).

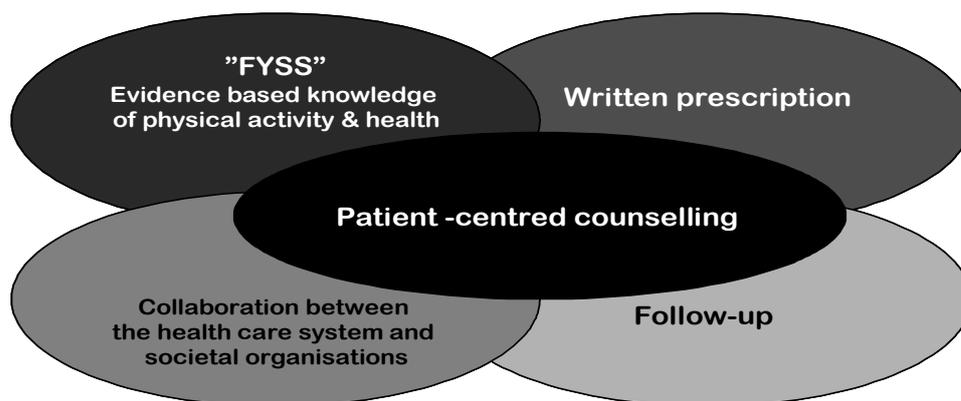


Figure 1. An overview of the Swedish method of Physical activity on Prescription. With permission from Kallings. 2008 (35).

PaP is a comprehensive solution; it requires a structured and supportive society, a functioning health care chain and a close collaboration with exercise organizers (36). Exercise organizers can be voluntary, municipally or private. They arrange the activities that the patients are prescribed (30). Mellquist *et al* showed that exercise organizers are positive to support individuals that received PaP and several organizers have created adjusted activities and subsidized prices (37).

All licensed health care professionals with sufficient knowledge can prescribe physical activity. The general manager of the health care organization is responsible for that the professionals have the adequate competence to prescribe physical activity (23). The prescription is individual based and prescribed as a complement or as a substitute of medical treatment (23). Prescriptions should be based on the Swedish guide “FYSS”, Physical activity in the prevention and treatment of Disease. FYSS contains recommendations for over 30 medical conditions that could be prevented or treated with physical activity. The last edition was published in 2008 (6,24). The prescriber needs to take all parts of the patient’s life into account and motivate them to increase their physical activity (24). The prescription should be written and clearly describe type of activity, duration and frequency(6). In order to facilitate for the prescribers a majority of the Swedish county councils have guidebooks of local exercise organizers (24). The prescription should be monitored just like medical treatment (23).

2.3.3 Adherence to the prescription

Most people adhere to the prescription. According to Kallings *et. al*. 65% of the study population adhered to the prescription at six month monitoring (38). Another Swedish study with long-time follow-up, shows that the average adherence was 50% at 12 months monitoring. In addition 21% reported that they partly adhered to the prescription

(39). This is supported from a study with long time monitoring from New Zealand, with an adherence of 43%. Further, 27% reported that they were physical active, but were undertaking another activity (28). A higher activity level at baseline and prescriptions including home-based activities were associated with a higher adherence (39). The high adherence rate indicates that adherence to PaP is as good as to pharmaceutical treatment of life style diseases (40).

2.3.4 Effects of the prescription

Previous studies show that Physical activity on Prescription increase the level of physical activity. Two Scandinavian studies show increased physical activity in form of total amount of physical activity/week (activities in daily life and organized exercise) at six months follow-up (32,41). The results vary more in the long-term follow-ups. Smith *et al* could not see any improvements in self-reported physical activity at eight month follow up (42). In another survey, half of the participants reported an increase in physical activity at 12 month follow up (43). This is supported by a cluster randomized controlled trial from New Zealand that shows an increase of physical activity at 12 months follow-up in form of an increase of total energy expenditure. The intervention group was also physically active at least 34 minutes more per week than the control group (27).

There are various factors that impact on the individual's ability to increase activity level after prescription. According to two Swedish surveys, there are there are no significant differences in the increase of physical activity between women and men (41,43). Individuals with a low degree of physical activity at baseline were those who increased their activity level most at monitoring after three and 12 months (43). Sørensen *et al* could not see any differences between individuals that received more intensive support as motivating talks and supervised exercise once a week for two months compared to individuals that only received one motivational talk in connection with the written prescription (33). Individuals that are active in everyday activities at a moderate level were more likely to be active in the long-term (43).

According to a Swedish randomized controlled trial, PaP has an impact on health, in the form of body composition and cardio metabolic risk factors. The study was focusing on insufficiently physically active individuals with overweight and abdominal obesity. At six month follow-up there were significant decrease in bodyweight, fat mass, s-cholesterol and HbA1c compared to the control group (44). PaP also have positive effects on health related quality of life in short- and long-term monitoring (27,34,41). There are few studies focusing on the cost-effectiveness of PaP. Two studies show that PaP is a good cost-effective method. Primarily because it increases the physical activity level and reduces the incidence of non-communicable disease and premature death (45,46). Röme *et. al.* shows that there are no significant differences in the impact of activity level between individuals that receive a prescription with information about exercise and exercise organizers compared to participating in a more intensive PaP-program (45,46).

3. THEORETICAL FRAMEWORK

3.1 Theories to promote physical activity

Theories of health promotion are drawn from various disciplines, such as psychology, sociology, anthropology, consumer behavior, and marketing. The theories can give explanations to the dynamics of health behaviors. This includes processes for changing behavior and factors that affect health behaviors including social and physical environments. The theories are also important in order to identify the target group, to develop a suitable method to change behavior and to identify outcomes for the evaluation. Various models work on different levels; individual, interpersonal and community level. The theories emphasize different factors as the most important, but they may share some common general ideas. No single theory dominates practice and research in health promotion. The choice of theory is based on the situation (47). Commonly used theories in physical activity interventions are; “Social cognitive theory”, “Transtheoretical model” and “Socio ecological model.” These theories are relevant in this study.

3.1.1 Social Cognitive Theory

The Social Cognitive Theory (SCT) is an individual-oriented behavior change model. It integrates ideas and processes from emotional, behavioral and cognitive models of behavior change. It is based on an interaction between intrapersonal-, social- and physical environmental factors (48). SCT derives from the Social Learning Theory emphasize that people learn from their own experiences as well as observations of others. Bandura further developed this theory in the 1970s and added the concept “self-efficacy” which is an important part in SCT (25,47,49). Self-efficacy is to what degree of confidence the individual thinks he/she will be able to change behavior *e.g.* increase activity level (47). Self-efficacy is strongly bound to the situation. There are several strategies in order to increase self-efficacy such as using incremental goal setting. By reaching goals, self-efficacy increases. Other strategies are using behavioral contract for example a formal contract with specified plans, strategies and goals as well as reinforcement through self-initiated rewards and incentives (25,47). SCT is applied in several changes of health behaviors *e.g.* dietary change and pain control (47).

3.1.2 Transtheoretical model

The transtheoretical model (TTM) consists of multiple theories and models of behavior change (48). TTM is used to understand the stages that a person goes through to change health behavior. It describes both the cognitive and behavioral processes. The model is applied to several health behaviors such as smoking and exercise. Components of the

TTM applying to exercise are: “stages of change,” “process of change,” “decisional balance,” “self-efficacy” and “temptation to not exercise”(50). The “decisional balance” derives from the social psychology process (48). It refers to the process of weighting pros and cons of increased physical activity (50). “Temptation to not exercise” concerns importance and amount of barriers for increasing physical activity. The “stages of change” describe the steps in the individuals’ progress of changing behavior. It is divided into five stages. The stages are; precontemplation, (not physical active and no intention to increase physical activity within six months), contemplation (not active, but is planning to increase physical activity within six months), preparation (not active, decided to increase physical activity within a month and has taken some initial steps), action (active, but only for the six last months) and maintenance (active, and have been that for more than six months) (Figure 2) (51). Progress through the stages can be both linear and cyclic. Attitude and perceived control differ in the different stages of the process. The individuals use various strategies to move on to the next stage in order to change their behavior. People in the precontemplation or contemplation stage need to change their way of thinking in order to make any progress. Individuals in the preparation and action stages need behavioral changing skills, while persons in the maintenance stage need cognitive or behavioral techniques in order to avoid relapse (48).

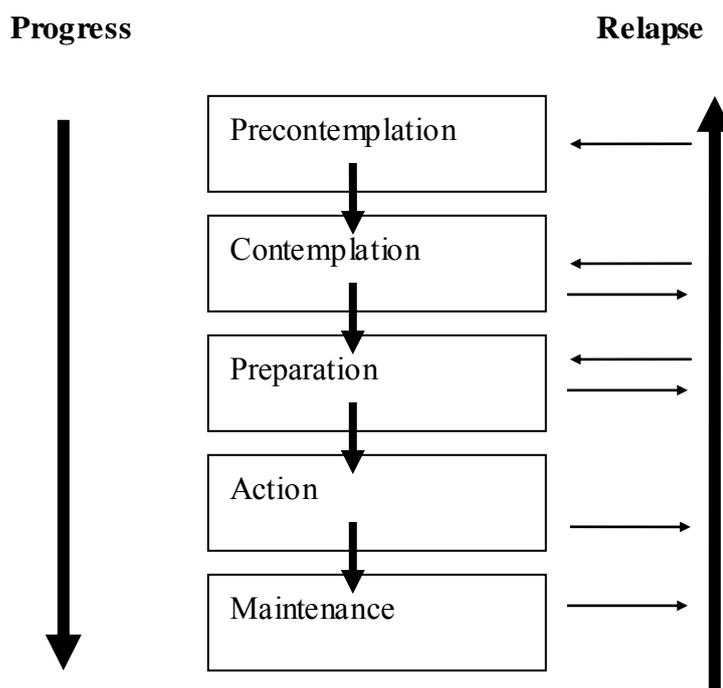


Figure 2. Transtheoretical model (51).

3.1.3 Socio ecological model

Bronfenbrenner emphasized the importance of the interaction between the individual and the environment in human development already in the 1970s (52). This approach has contributed to a growing interest for the social ecological model in health promotion. It

is a common model in the purpose to promote physical activity in society. Four areas are identified as domains of active living; recreation, transport, occupation, and household. The socio ecological model takes intrapersonal, cultural and organizational considerations (Figure 3). Typical for the socio ecological model is that it takes the environment and especially policies (laws, regulations and codes) into account. The socio ecological model operates on multiple levels with diverse disciplines combining concepts and methods to create new trans-disciplinary approaches. Special for the social ecological model is that it focuses on the possible initial causes for low physical activity in order to affect the citizens' behavior (53).

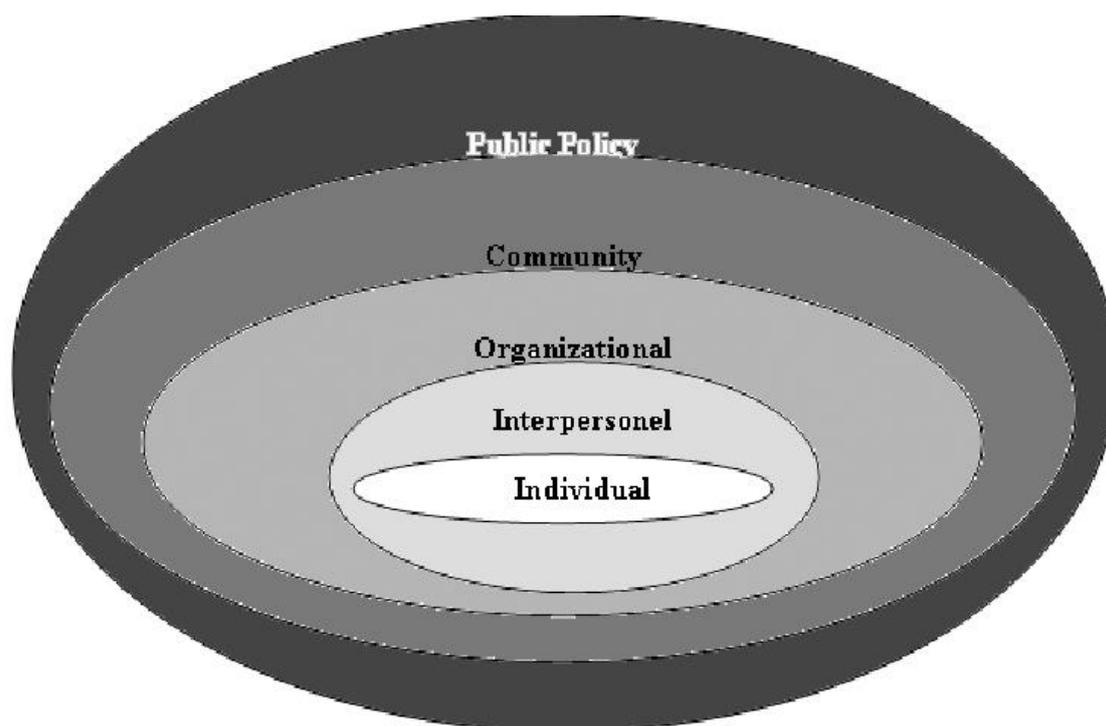


Figure 3. The socio ecological model (53).

3.2 Factors influencing physical activity level

Physical activity can be influenced by factors at three levels; individual, socioeconomic and environmental. Individual factors that are barriers for physical activity are costs, lack of time or lack of confidence about entering unfamiliar settings such as a gym. Other reasons are poor body image, self-perception of not to be “the sporty type” or assuming to be enough physically active. Individual factors that have a positive impact on our ability to be physically active are; level of perceived health or fitness, perceived benefits or expectations of benefits, intention to exercise and enjoyment. Some factors, such as stages of change, self-motivation, social support and self-efficacy, can have

both positive and negative effects on physical activity (48,54). Activities on a moderate or vigorous intensity are to a higher degree reported by males. In spite of this, there are small differences in the total amount of physical activity between the sexes (16).

There is a clear socioeconomic gradient in being sufficiently physically active inside and outside the Nordic countries. Individuals with lower education and a lower overall income level are more sedentary than persons with a higher socioeconomic status. There is also an association between participating in leisure time activities and socioeconomic. For instance, individuals with a lower socioeconomic status tends to have less free time, poorer access to leisure facilities and more often live in an environment that does not support physical activity (4,5).

Factors in the environment that influence physical activity are neighborhood safety as well as access to and satisfaction with physical activity facilities. (5). It is also shown that there are seasonal changes in household, occupational, and leisure time physical activity. During the summer, total activity level increased for both men and women (55).

Policymakers should prioritize community interventions in order to influence individual, socioeconomic and environmental factors. International and national publications emphasize the need of multi-sectorial cooperation between governmental and non-governmental organizations in order to promote physical activity (4,12,20).

4. AIM AND RESEARCH QUESTIONS

Physical activity on Prescription is used in all Swedish counties in order to increase physical activity level and improve public health. Impact of increased physical activity level and adherence to the prescription has been good, but it seems to be most efficient for individuals active in daily life activities (56). The knowledge about prescriptions involving organized exercise needs to be further explored in order to; identify individuals that would benefit from this, understand the impact of the prescription on physical activity level and how it should be carried out in the clinical setting.

4.1 Aim

To evaluate the effectiveness of Physical activity on Prescription (PaP) including organized exercise.

4.2 Research questions

- What characterizes patients receiving prescribed organized exercise?
- Do the individuals receive any support from the health care or exercise organizer and are they satisfied with the support they get?
- Which activities are prescribed and does the prescription have an impact on physical activity level after three and six months follow-up?
- Do the participants adhere to the prescription and what factors had impact on the ability of adherence?
- How do the participants experience the prescribed organized exercise?

5. METHOD

5.1 Design

In order to understand the correlation between health promoting interventions and health outcome, there is a need for an appropriate study design. The efficacy or the effectiveness of an intervention can be evaluated. The efficacy is defined as effects under “ideal conditions” while effectiveness is described as the effect under “normal conditions.” Randomized controlled trials are good in order to evaluate the efficacy but are difficult to use in the real life clinical setting. A clinical observation study can be used to evaluate the effectiveness of an intervention. An advantage with the observational study is that it includes aspects of the intervention integrated in the routine practice (57).

In this evaluation a clinical observational study was chosen. Observation studies are a collection term for an observation of a situation without affecting the process (58). This study is prospective and individuals are studied over time.

5.2 Study sample

Inclusion criteria:

- Being 18 years or older.
- Having a need to increase physical activity to prevent or treat disease related to insufficient physical activity.
- The prescription should include organized exercise at least once a week and could be in combination with activities in the daily life.

Exclusion criteria:

- Individuals only prescribed activities in daily life or activities in the health care centers.
- Individuals that did not speak the Swedish language.

Individuals were prospectively collected. The aim was to collect 150 participants from fall 2009 until the end of March 2010. There were 146 patients that received information of the evaluation and out of these, 98 fulfilled the inclusion criteria and gave their consent to participate.

The study is based on individuals from four counties or municipalities in the middle and southern parts of Sweden; Gotland, Jönköping, Uppsala and Lidingö. They represent local differences in size, urban/rural areas and health status (Table 1). Socioeconomic factor varies, citizens in Uppsala and Lidingö have on an average a higher education and income than the national level. Meanwhile, the percentage of individuals with a high-income and higher education is lower by citizens from Gotland and Jönköping than the national level (59,60).

Table 1. Overview of area, population and health status in Sweden and the collection areas

	Area SQKM	Inhabitants	Average age	Life expectancy women/men	Estimated good health
Gotland	3183.7	57 221	43.2	82.2/78.9	69%
Jönköping	10 475	336 044	41.3	83.2/79.2	70%
Lidingö	49	43 445	41	84.7/81.5	72% ¹
Uppsala	8209	331 898	39.7	83.4/79.7	72%
Sweden	450 295	9 340 682	41	82.9/78.7	70%

Data obtained from Swedish National Institute of Public Health, 2009. ¹ Based on data from Stockholm county.

5.3 Setting

The PaP-model differs and is used to various degrees in the four counties. The counties started to use PaP between years 2001-2004. Collection period and number of participating care units in this evaluation varied between the counties/municipalities (Table 2).

Table 2. Overview of the four participating areas

County/ Municipality	Collection period	Total PaP in the county/municipality during the collection period	Sample units in the evaluation	Participants in the evaluation
Gotland	09-01-2009- 03-31-2010	156	6	15
Jönköping	09-01-2009- 12-31-2009	512	4	32
Lidingö	01-01-2010- 03-31-2010	27 ²	1	6
Uppsala	09-01-2009- 03-31-2010	302	Uppsala sports federation ³	46

² Torsvik health care centre. ³Uppsala Sports federation receives prescriptions from all health care centers and hospitals in Uppsala county council.

Gotland has one hospital and seven health care centers. Six of the health care units are participating in the present evaluation; Hemse health care centre, Visby north/south health care centre, Roma Health care centre, Slite health care centre and rehab department in Visby. The PaP-method was initiated in Gotland municipality in 2004. In order to increase the use of PaP a project was initiated in 2009. Today is PaP used in all health care centers but to different degree. In 2009, 180 prescriptions of physical activity were prescribed (personal communication Sofia Carlsson, Gotland community, October 4, 2010).

Jönköping county has three hospitals and 51 health care centers. Four units are participating in the evaluation; Kungshälsans health care centre, Rosenhälsans health care centre, Mullsjö health care centre and Bodafors health care centre. Jönköping county initiated the PaP-method during the national campaign, "Sweden on the move," in 2001. All health care centers prescribe physical activity, but to different degrees. In 2009, 1,561 prescriptions of physical activity were prescribed (personal communication Lena Larsson, Jönköping Public Health Department, October 7, 2010).

Stockholm consists of 21 municipalities. Lidingö is one of the municipalities. Torsviks Health care centre on Lidingö participated in the evaluation. Lidingö municipality started a project in 2004 to improve the use of PaP. During 2009, 112 prescriptions were prescribed. (personal communication Ina Sand, Lidingö municipality, October 5, 2010).

Uppsala has two hospitals and 42 health care centers. In this study patients are collected through "Uppland's Sport Federation" and could come from any of the Uppsala health care units. Uppsala council started to use the PaP-method in 2001. A project was started in 2005 using PaP-coordinators Upplands' Sports Federation. The coordinators support individuals that receive PaP through phone calls. In year 2009, 883 prescriptions of physical activity were prescribed in the primary health care. Additional prescriptions were prescribed in the hospitals (61). Of those prescriptions, 432 were sent

concerning the prescription included information regarding prescriber and support from the health care and exercise organizer. The questionnaires were constructed by the author, inspired by previous literature and studies, in order to map the study population (62).

5.4.2 Physical activity

Previously used and tested questions of physical activity in leisure time, sedentary behavior and readiness to adapt and maintain physical activity were used (63). This made it possible to compare physical activity level with national levels. These parameters were measured at all three measuring times.

5.4.2.1 Type of activity

The individuals could choose one or more activities among 12 given options or come up with an alternative of their own. The question was inspired by earlier Swedish questionnaires examining the Swedish PaP-model (35,56).

5.4.2.2 Leisure time physical activity

The question asks about leisure time physical activity during the last year and is widely used in various Swedish evaluations (41,64). It includes four categories: (A) sedentary leisure time (< 2 h of light physical activity/week, *e.g.* walking, cycling), (B) light physical activity, (≥ 2 h/week generally without sweating *e.g.*, walking, cycling, gardening), (C) regular moderate exercise (1-2 times/week, ≥ 30 minutes each time *e.g.* jogging, swimming, tennis, badminton) and (D) regular exercise (≥ 3 times/week, ≥ 30 minutes each time *e.g.* jogging, swimming, tennis, aerobics or other strain exercise) (65). The participants were encouraged to choose the category that was most consistent with their activity during leisure time. In the cases where the participant has chosen several categories the lower option has been used. Analyses were done between the follow-up and baseline data and categorized as increase, no change or decrease. The question is validated in order to categorize people into different categories of activity level (63).

5.4.2.3 Readiness to adapt and maintain physical activity

The measurement “stages of change” was used to evaluate if the participants adapted and maintained a more physically active lifestyle. This instrument has an acceptable level of validity and reliability (50). The question was formulated in the same way as in Swedish and European surveys as to be able to compare with population levels. The question consisted of seven options and divided the participants into one of the six stages of change groups. The groups are; (A) precontemplation, (B) contemplation, (C) preparation, (D) action, (E) maintenance and (F) relapse. An alternative answer, (G) “I do not know/can not estimate,” was also available (41,51). The participants were

encouraged to choose the category that was most consistent with their readiness to adapt/maintain physical activity. In the cases where the participant has chosen several categories they were counted as dropout. Movement between the groups at baseline and follow-up was analyzed.

5.4.2.4 Sedentary behavior

Sedentary behavior was measured with the sitting question in the short time version of the International Physical Activity Questionnaire (IPAQ) last 7-days questionnaire. This question is reliable and valid to measure sedentary behavior (63,66). The participants were asked to estimate total time per day spent sitting on a week day (including time during work, school or at home.) An alternative answer, "I do not know/can not estimate," was available. Reported values over 20 hours per day were excluded (ten at baseline, six at three month and seven at six month) because the sum of sitting and sleeping would be over 24 hours per day. Sedentary time at baseline and follow up were analyzed. The change was categorized as increased, no change or decreased.

5.4.3 Adherence to prescribed physical activity

Adherence was self-reported at follow up and the individuals were categorized into three different groups; (A) adhered to the prescription, (B) adhered but changed type of physical activity, (C) did not adhere. There is no validated self-rated question in measuring adherence to physical activity interventions although this question is used in earlier Swedish evaluation of adherence to PaP (38,39). In order to control baseline factors, socioeconomic factors and physical activity level, which could affect adherence, participants were divided in to dichotomous variables. A and B formed the group that adhered and C the group that did not adhere. This choice was made in order to focus on the participants' adherence to agreed intensity, frequency and duration. Sticking to the exact same type of physical activity was not crucial. Association between adherence and change in physical activity level at follow-up was tested in order to see differences in the three adherence groups. The change was categorized as increased, no change or decreased.

5.4.3.1 Factors influencing adherence

Participants were asked to report the factors impacting their ability to adhere or not adhere to the prescription. The individual could choose one or more among a number of given factors. The factors were based on alternatives used in an earlier evaluation of PaP (38). Participants could also come up with an alternative of their own.

5.4.4 Experiences of prescription including organized exercise

Experiences of receiving PaP were evaluated at both follow-up sessions. The answers to the open ended question “What was your experience getting PaP including organized exercise,” were analyzed through manifest content analysis. Manifest content analysis focuses on visible and obvious components of the text and includes no deeper or abstract interpretations (67). The answers were read several times in order to identify sentences and words which were relevant for the last research question. Meaning units were created based on relevant sentences with similar content or context. The meaning units were condensed by shortening the text while maintaining the core of the content. This text was grouped and categories and sub-categories were created.

5.5 Statistics

Nominal, ordinal and ratio scales were used in the questionnaires. Variables from the nominal scale, that included sex, readiness to adapt and maintain physical activity, were presented as frequency and relative frequency. Ordinal scaled variables, such as age categories and physical activity in leisure time, were presented as median and interquartile range or frequency and relative frequency. Variables from the ratio scale, like BMI (Body Mass Index) and sedentary time, were presented as mean and standard deviation (parametric –data) or median and interquartile range (non-parametric data).

Statistics for non-parametric variables was used because of the large amount of qualitative variables and the size of the study population (58). In order to analyze baseline differences between the dropout group and respondents Chi-square test (X^2) was used for nominal scaled data and Mann-Whitney U-test for ordinal and ratio scaled data. Analyses of changes between baseline and follow-up were analyzed through Wilcoxon’s Signed rank test for ordinal and ratio scaled data. Differences in nominal scaled data were analyzed through Chi-square test (X^2). Intention-to-treat analysis was used by carrying out baseline observations for missing data of all outcome variations (58). Mann-Whitney U-test was used to analyze differences between individuals that adhered and did not adhere to the prescription.

The significance level was set at $p \leq 0.05$. In order to handle and analyze data, the statistical analyzing programs Microsoft excel 2003 and 2010, with the additional softwares “Analyze it” as well as STATA 9.0 (for Windows) were used (68,69).

5.6 Ethical consideration

In this evaluation the individuals were given information on the objective of the study, the data collection, the process of analysis and how the data would be preserved. They were assured anonymity as well as the opportunity to discontinue participation at any

time, if they desired to do so. All participants provided written, informed consent. No ethical approval was needed according to the Swedish Central Ethical Review Board (70).

Discussing an individual's behavior such as physical activity involves some ethical issues. Avoiding this discussion, however, is not either ethically correct. Clear evidence proves the correlation between physical activity and health. When considering changing an individual's lifestyle, his or her autonomy must be taken into account. The dialogue about physical activity and health should be patient-centered and based on the patient's beliefs, expectations and fears. The prescription of physical activity should be a concordance between the patient and the prescriber. Through this approach, it is possible to take advantages of the patient's own resources and initiative and to avoid violating the individual's privacy (25).

6. RESULTS

6.1 Study population

The study population consisted of 98 patients (82% women) who received PaP from health care units in four Swedish counties. The answering frequency was 80% (n=78) at three months and 72% (n=71) at six months, although there was a small internal dropout in some questions. The recruitment procedure is illustrated in Figure 5.

Patient characteristics and physical activity are presented in Table 3 and 4. There was a small internal drop-out in some questions due to that all participants did not answer every question. Approximately half of the study population (46%) belonged to Uppsala county and one-third (31%) came from Jönköping. Meanwhile, one-fifth came from Gotland (15%) and Lidingö (6%). The majority (55%) were in the age groups between 50 and 69 years. Almost 70% were classified as overweight or obese ($BMI \geq 25$) (Table 4). The BMIs ranged between 17,8 and 44.0. Almost half of the study-population (44%) reported that they were in the preparation stage to become more physically active. One fourth of the population reported that they were sedentary and 26% reported light activities at leisure time (Table 3).

Data from 78 individuals were available at the three month follow-up and 71 at the six month follow-up. No significant differences were found in baseline characteristics or physical activity level between the total group and the respondents of the 6 month follow-up (Table 3 and 4).

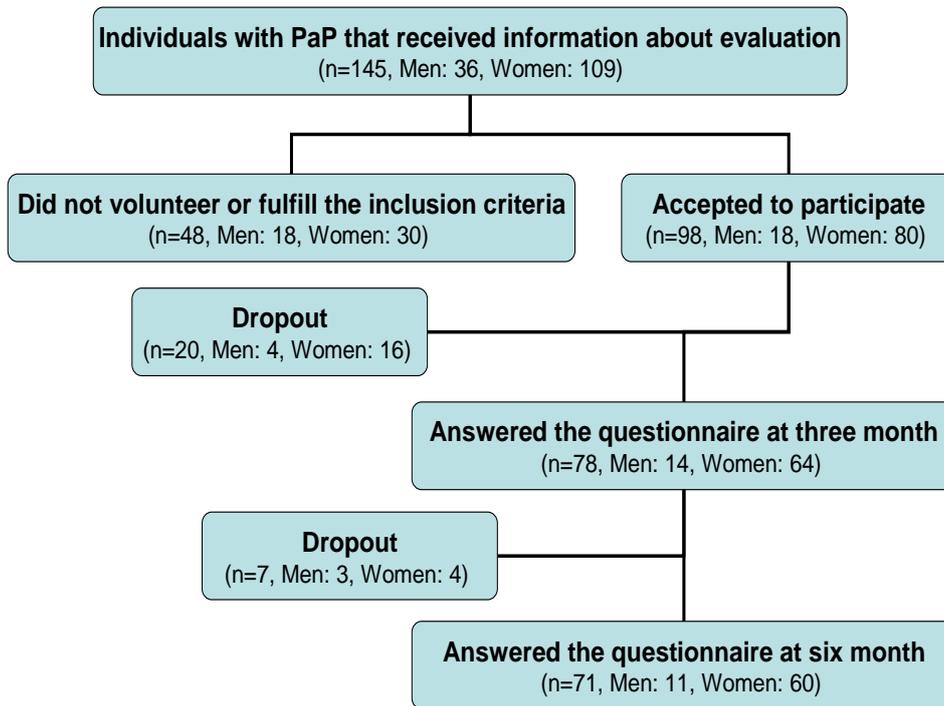


Figure 5. Procedure used for recruitment of individuals for the evaluation of Physical activity on Prescription.

Table 3. Physical activity level at baseline for the total group, and those that remained to the three and six month follow-up respectively. P-values are presented for differences in baseline between total group and respondents at the six month follow-up

Variable	Total group N=98	Participants at 3 month follow-up n=78	Participants at 6 month follow-up n=71	P-value
Physical activity in leisure time				0.95
Sedentary	17%	22%	16%	
Light activity	50%	27%	51%	
Moderate activity	23%	39%	11%	
Regular moderate activity	10%	13%	10%	
Sedentary time per week day (hours/day)				0.94
Median (IQR)	7 [4-8]	7 [6-8]	6.8 [4-8]	
Do not know (n)	41	30	29	

Table 4. Characteristics at baseline for the total group, and those that remained to the three and six month follow-up respectively. P-values are presented for differences in baseline between total group and respondents at the six month follow-up

Variable	Total group N=98	Participants at 3 month follow-up n=78	Participants at 6 month follow-up n=71	P- value
Sex				0.63
Male	18%	18%	15%	
Female	82%	82%	85%	
Age				0.41
18-29	4%	4%	4%	
30-39	9%	6%	4%	
40-49	14%	15%	11%	
50-59	24%	26%	29%	
60-69	33%	31%	33%	
70-	15%	17%	19%	
Education				0.53
Elementary	28%	31%	35%	
Upper secondary school	33%	31%	29%	
University >3 years	18%	16%	16%	
University 3< years	21%	21%	21%	
BMI				0.53
Mean, SD.	29.8 (6.4)	29.7 (7.3)	30.5 (6.3)	
Fraction with BMI \geq 25	72%	72%	76%	
Fraction with BMI \geq 30	45%	42%	47%	
Civil status				0.49
Married/cohabitants	62%	60%	63%	
Living apart	9%	9%	9%	
Living alone	21%	22%	20%	
Widow/widower	7%	9%	9%	
Main occupation				0.55
Student	2%	1%	1%	
Full-time employed	24%	21%	16%	
Part-time employed	21%	25%	26%	
Retired	38%	38%	40%	
Unemployed	3%	3%	2%	
Sick leave	12%	13%	14%	

6.1.1 Reasons for Physical activity on Prescription

Almost half of the study population (n=45) reported that they received their prescriptions due for multiple reasons. The most common reasons for issuing PaP were musculoskeletal disorders (n=53), overweight (n=39) and hypertension (n=22). At the free text option, “other,” (n=15) the participants mentioned respiratory diseases, balance problems, motivational support, rheumatic disease, stress and rehabilitation after surgery (Figure 6).

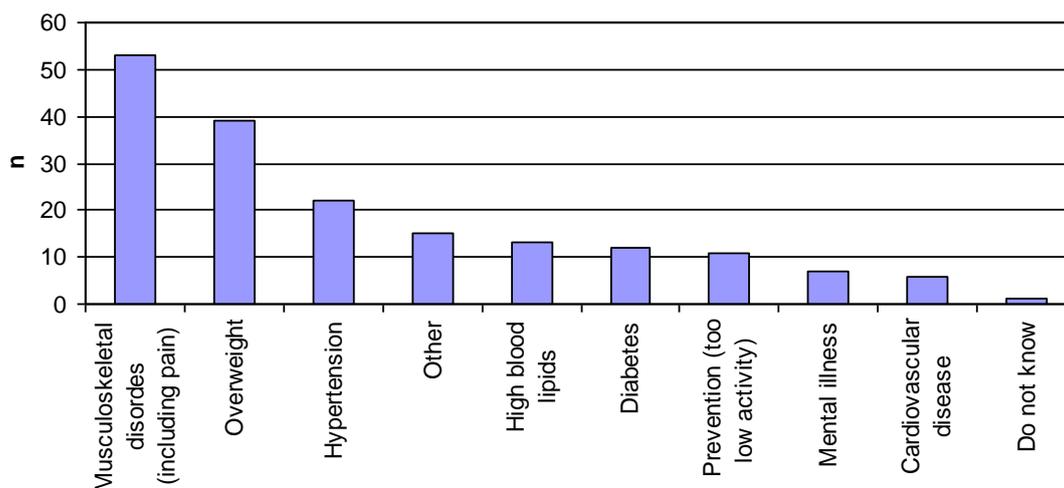


Figure 6. Reasons for Physical activity on Prescription (PaP). The 98 individuals could choose one or more of the predetermined options.

6.2 Support when receiving Physical activity on Prescription

Most prescriptions were prescribed by physical therapists; they were responsible for 40% of the prescriptions. The physicians accounted for 34% and nurses 20% of the total amount of prescriptions. Other professions (n=5) mentioned were; dietician, psychologist and occupational therapist.

The majority of the study population (n=82) reported some kind of extra support from the health care centre (Figure 7). The most common forms of support were written information (n=25) and monitoring visit to the prescriber (n=21). Other forms of support (n=13) were; good contact with the prescriber, support from “coaches”, extra support from a physical therapist or participating in a special group in the health care.

More than 60% (n=47) of the participants reported that they were satisfied and did not wish for further support from the health care. Barely 25% were uncertain while, 14% wished for better support from the health care centre. They were, for example, asking for subsidized prices at the exercise organizers (n=4). They also asked for better support

from the health care centre (n=5) in form of more advice about activities, longer period of support and better follow-up in the form of new tests.

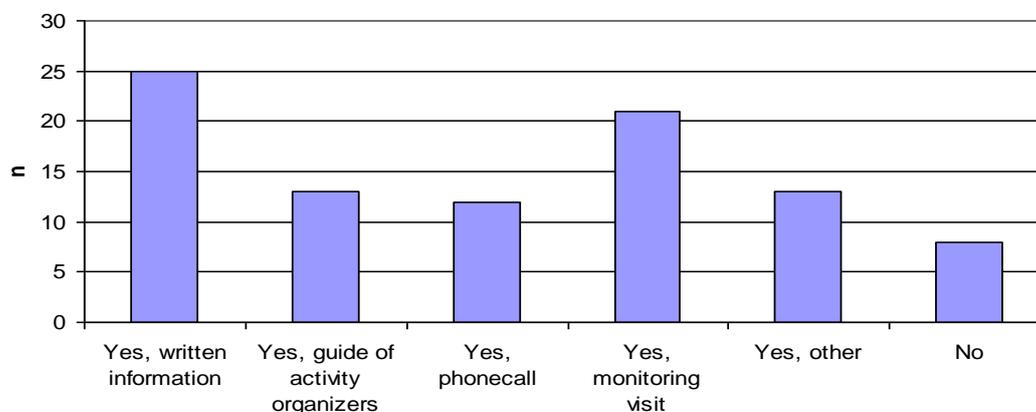


Figure 7. Reported support from the health care. The 82 individuals could choose one or more of the predetermined options.

Of the participants (n=71) who went to an exercise organizer, 66% reported that they informed the exercise organizer of their prescription. Thirty-five of the participants reported that they got support from the exercise organizer. Meanwhile, 27 individuals did not receive any support. Instructions and adjusted exercise were the most mentioned forms of support (n=16). These were exemplified through: designing appropriate exercise program or help with the tools/machines. Good response and support (n=7) were also reported reasons, such as nice group instructor, phone calls as well as acceptance and awareness of the individual's situation.

More than 70% (n=48) of the respondents did not need any further assistance from the exercise organizer. Individuals that wished for better support, 12%, asked for; information about specific exercise, group exercise in order to get the group support and assistance at several occasions. One participant asked for reduced prices.

6.3 Physical activity

6.3.1 Type of physical activity

The majority of the participants, 67% (n=64), were prescribed multiple activities. The most common baseline activities were walking, aerobics, strength training and water aerobics. Aerobics was divided into ordinary groups (n=10), PaP groups (n=15) and special groups arranged by patient associations or associations for retired (n=9). PaP groups were special groups designed for individuals with PaP. At the free text option

“other” the participants mentioned; “free choice”, bicycling, “home exercise programs”, balance training, core (strength training for back and abdomen) and exercise for individuals with obesity.

At the three month follow-up 74% (n=56) were active in multiple activities. There was a greater variation between the different activities. Walking was the most common activity, followed by aerobics; ordinary groups (n=12), PaP-groups (n=9) and special groups arranged by patient associations or associations for retired (n=11). Then came strength training and “other activities”. The free text option had increased. Activities mentioned were bicycling, dancing, home based exercise balance training, relaxation training, “chiball”, rowing, rehabilitation training and specially arranged walking tours. One individual mentioned that he/she was not active in any activities. At the six month follow-up the number of individuals that were active in multiple activities was still high, 71%, (n=50). Walking was still the most common activity, followed by aerobics with ordinary groups (n=11), PaP-groups (n=9) and special groups arranged by patient associations or associations for retired (n=6). Water aerobics, swimming and strength training were the activities that decreased the most from baseline. Nordic walking (with hand-held poles), on the other hand, increased from 17 to 22 individuals. Many participants still mentioned other activities such as: bicycling, gardening, home-based exercise, rehabilitation and dance. Five individuals mentioned that they were not active in any activities. Distribution of activities at the three measuring occasions is shown in Table 5.

Table 5. Type of reported physical activities at baseline, three- and six month follow-up. The majority was active in several activities

Activities	Baseline (95 respondents)	3 month follow-up (77 respondents)	6 month follow-up (71 respondents)
Walking(n)	46	53	48
Aerobics (n)	34	32	26
Strength training (n)	33	20	11
Water aerobics (n)	28	14	10
Nordic walking (n)	17	19	22
Other (n)	17	19	21
Swimming (n)	10	6	3
Yoga/Pilates (n)	9	6	7
Jogging (n)	2	4	3
Ball/racquet sports (n)	0	1	0
Total replies (n)	196	174	151

6.3.2 Physical activity in leisure-time

The majority of the study population was categorized to the group “light activity” at every measurement. The groups “sedentary” and “regularly moderate” tended to

decrease at both three and six month follow-up, meanwhile the category moderate activity tended to increase at both sessions (Figure 8).

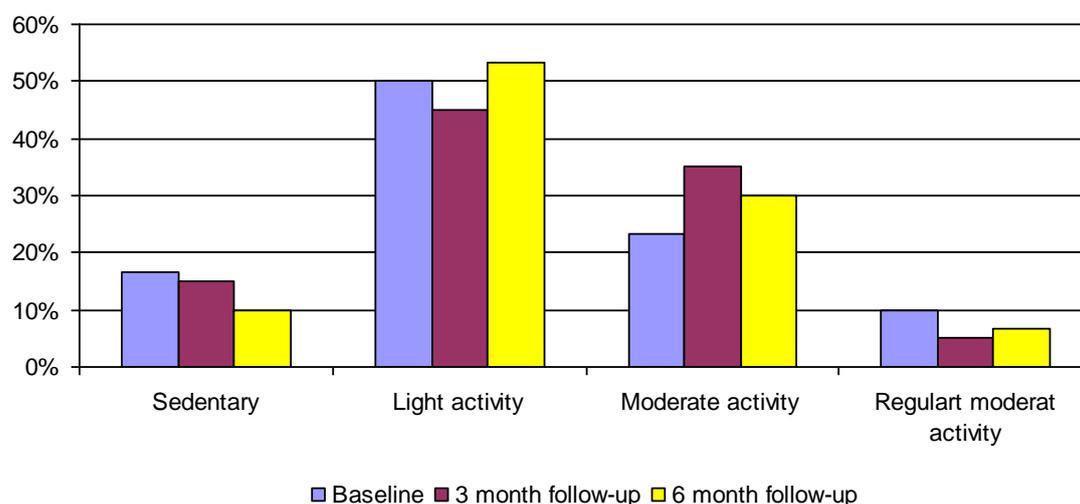


Figure 8. Self-estimated physical activity at leisure time, for individuals participating at all three measuring sessions (n=60), baseline, three and six month follow up.

In the group which responded to this question at all three measuring times (n=60) there was no significant increase at three (p=0.78) or six (p=0.68) month follow-up. Individuals that were categorized to the group “sedentary” or “light activity” increased their activity level significantly (p≤0.05 and p≤0.01) from baseline to the six month follow-up. At the three and six month follow-up 28% reported increased physical activity at leisure time (21% and 16% decreased respectively). Also in the intention to treat analysis there was an increase. One fifth increased physical activity in leisure time from baseline to three and six month follow-up (15% and 11% decreased respectively).

6.3.3 Readiness to change

At baseline, most patients, 52%, were in the stage of preparation, followed by 14% in maintenance and 12% in the relapse stage. Of the answering participants at three and six months 25 % and 30 % respectively reached a more active stage. Figure 9 shows changes from baseline to three and six month follow-up in readiness to change. There was a significant increase of the stage maintenance (p≤0.001) from baseline to the three and six month follow-up. There was a trend of decrease in the preparation stage (p=0.068) at the six month follow-up. The intention-to-treat analysis shows a significant decrease in the stage preparation at three (p≤0.05) and six months (p≤0.05). In the stage maintenance there was a significant (p≤0.05) increase at the six month follow-up.

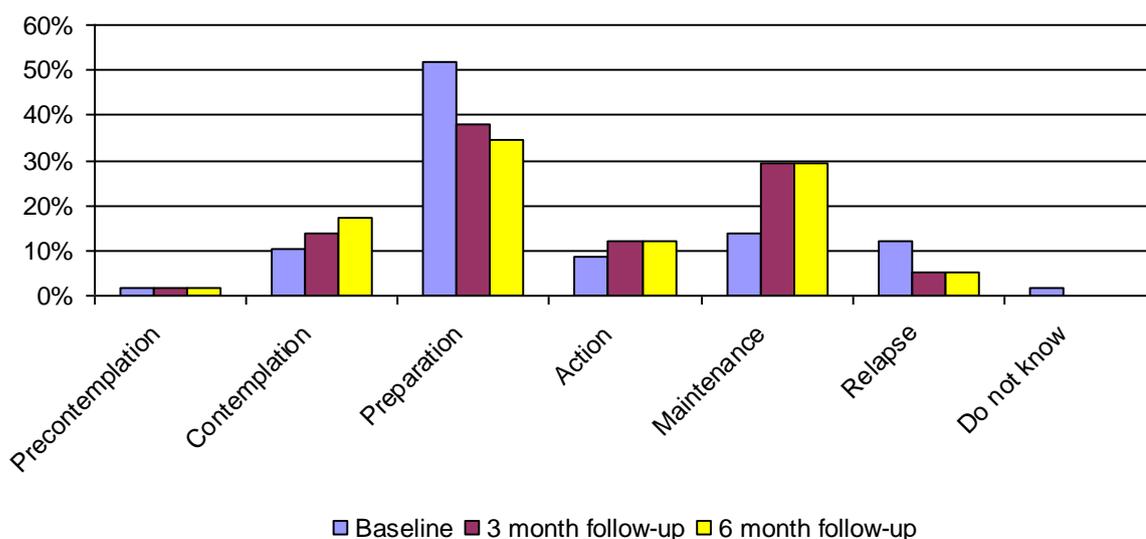


Figure 9. Stages of change at baseline three and six months for participants answering the question at all three measuring sessions (n=58). There was a significant increase of the stage maintenance from baseline to the three and six month follow-up.

6.3.4 Sedentary behavior

Participants answering the question at baseline and three month follow-up changed their sedentary time from a median of 6.5 (IQR 4-8) at baseline to a median of 5 (IQR 3.25-6.5) hours at follow-up. Participants answering the question at baseline and six month follow-up decreased their sedentary time significantly ($p \leq 0.01$) from a median of 7 (IQR 5-8.75) to 6 (IQR 4-6.75) hours. With the restrictive intention-to-treat analysis there was a significant decrease at both three and six ($p \leq 0.05$) month follow-up. There were 41 participants at baseline and 20 at the three respectively six month follow-up who answered “I do not know/can not estimate”.

6.4 Adherence

A majority (74%) of the participants reported that they adhered to the prescription at three month follow-up; 51% (n=41) adhered fully and 23% adhered but had altered the type of physical activity. In the six month follow-up 68% reported (n=47) that they adhered to the prescription; 49% adhered fully and 19% adhered but had altered the type of physical activity. According to the intention to treat analysis all missing data in the follow-up questionnaires were assumed to be non-adherent. This gave an adherence rate of 55% and 44% at the three and six month follow-up respectively. There were no significant differences regarding socioeconomic factors or physical activity level at baseline between the group that adhered and the group that did not adhere to the prescription.

6.4.1 Factors impacting on adherence

Frequently reported factors that facilitated adherence to the prescription at three month follow-up were; experienced positive effects, had already made up their mind, improved knowledge of beneficial effects of physical activity and that it was fun. After six month the three most mentioned factors were the same, but the options; support from relatives and friends, group affiliation and “other” had increased. The participants that chose “other” mentioned regular support and the knowledge of being monitored as important factors (Table 6).

Table 6. Factors facilitating adherence to the prescription at three and six month follow-up. The individuals could choose one or more of the predetermined options resulting in a higher amount of replies than the number of participants

Factors facilitating adherence	3 month follow-up (53 respondents)	6 month follow-up (45 respondents)
Positive effects (n)	26	16
Had made up my mind before (n)	25	19
Improved knowledge of the benefits of physical activity (n)	16	4
It is fun (n)	16	14
The written prescription (n)	13	9
The prescription conversation (n)	10	7
Group affiliation (n)	10	11
Support from relatives and friends (n)	5	6
Respond from activity organizer (n)	5	3
Other (n)	4	5
Total replies	130	94

Most mentioned factors that complicated adherence were; illness/pain and other reasons. Those factors were *e.g.* depression, tiredness and stress. At six month follow-up, the option illness/pain increased further, lack of motivation and time constraints had also increased and were the second and third most mentioned options (Table 7).

Table 7. Factors complicating adherence to the prescription at three and six month follow-up. The individuals could choose one or more of the predetermined options resulting in a higher amount of replies than the number of participants

Factors complicated adherence	3 month follow-up (24 respondents)	6 month follow-up (28 respondents)
Illness/pain (n)	17	20
Other (n)	7	3
Lack of motivation (n)	6	7
Have not found the right activity (n)	5	3
Time constraints (n)	4	6
Time for exercise was not suitable (n)	4	3
The season/weather (n)	4	2
Economic constraints (n)	3	2
Lack of support from relatives/friends (n)	1	1

6.4.2 Adherence and self-reported physical activity at leisure time

There were differences in changes of physical activity level from baseline to follow-up between the adherence groups. At the three month follow-up, 32% of the individuals that reported adherence or adhered but with altered activity reported an increased physical activity. Meanwhile 17% increased physical activity in leisure time in the non-adherence group. At the six month follow-up 30% of the participants that reported adherence including the individuals that altered activity had increased their physical activity in leisure time. In the non-adherence group, 24% reported an increase in physical activity (Table 8).

Table 8. Self-reported adherence and changes in self-reported physical activity (PA) in leisure time from baseline to three respectively six months follow-up. Data are presented as frequency and relative frequency (percentage).

Change in PA	Adhe red	Did not adhere
3 months	(n=53)	(n=18)
Decrease	9 (17%)	6 (33%)
No change	27 (45%)	9 (50%)
Increase	17 (32%)	3 (17%)
6 months	(n=43)	(n=21)
Decrease	6 (14%)	4 (19%)
No change	24 (56%)	12 (57%)
Increase	13 (30%)	5 (24%)

6.5 Experiences of Physical activity on Prescription

The analysis of the participants' experiences of PaP involving organized exercise was divided into two categories; inhibitory and enabling factors. Each category consists of three subcategories these are presented in more detail through written text and citations.

6.5.1 Inhibitory factors

6.5.1.1 Costs

Participants mentioned the problem of following the prescription in the everyday life. Reasons were both economical and personal costs *e.g.* feeling worse/increased pain, time-consuming, long distances and too expensive.

PaP is great, my problem is partly lack of time. I live 13 km from the nearest urban area. The nearest swimming pool is 30 km away. It gets expensive to travel.

On the contrary, the prescription facilitated the economical costs for one participant. The patient got "social allowance" because of the prescription, which enabled him/her to make exercise at the exercise organizer.

6.5.1.2 Lack of follow-up

The lack of follow-up was mentioned as a problem to continue with regular exercise. Participants asked for monitoring fitness tests and follow-up during a longer time from the health care sector. This would increase their motivation and be a support if problems or questions arise along the way. There was also a wish for extra support from the health care sector or the exercise organizer after longer breaks, such as summer vacation, in order to resume their earlier exercise.

PaP was good, but there should be more following-up and evaluation e.g. fitness tests.

6.5.1.3 Seasonal changes

Participants mentioned that season affected their exercise. Some participants asked for more "season specific" exercise. The biggest problem for many participants was that many exercise organizers had been closed during the summer. Another problem was the difficulty to find an exercise-group to join in the middle of the semester and that they had to pay for a whole semester although they just attend part of the semester.

During the semester it worked well with group exercise two times a week, but unfortunately the exercise is interrupted during the summer.

6.5.2 Enabling factors

6.5.2.1 Personal counseling and adaptation

Participants perceived the personal counseling with the PaP-coordinator as positive since they took the whole life situation into account. They mentioned that gradually increased exercise and clear goals facilitated the change towards becoming more physically active. The support from the exercise organizer was another important part e.g. adjusted exercise and understanding.

It is always good to get expert guidance. I was very preoccupied with the pain I had. The PaP-coordinator supported me to go and try this group exercise. She knew that the leader was very good and responsive. Which she was! It worked great for me.

6.5.2.2 Motivation

The PaP-model was stated as a good method to get started and become physically active. Feeling better, increased knowledge and the ability to change focus are other important motivational factors mentioned. Attitudes within health care sector toward PaP and the individuals' ability to affect their own health motivated the participants to become more physically active.

Increased motivation due to health care's attitudes, that I can do a lot for my own well-being. This is shown by the prescription as a symbol.

6.5.2.3 Social support

Social support was the most mentioned positive part of receiving PaP. Participants mentioned that it was easier to make exercise together with like-minded people and that it was an important step for them in breaking social isolation. Through the exercise they met new friends and had fun. The group-participants stated that they supported and motivated each other.

Participation has become a social "better life" and a "must" in the calendar.

7. DISCUSSION

This clinical observation study, explored the effectiveness of Physical activity on Prescription including organized exercise. It was an observation of the clinical setting in four Swedish counties.

The main finding from this evaluation was that Physical activity on Prescription including organized exercise had limited effect on increasing physical activity in leisure time. It did have a positive effect through the behavioral stages and lead to a significant decrease of sedentary time after six months. Adherence to the prescription was good, with 68% reporting adherence after six months. Factors improving adherence were: positive effects, that they already had made up their mind and the prescription including the motivational counseling. Factors complicating adherence were illness/pain, lack of motivation and time constraints. The majority of the study population stated that a prescription of organized exercise was a good method to start and continue with physical activity. Meanwhile several participants mentioned the importance of more frequent and longer follow-up. Special disadvantages with receiving PaP for organized exercise were personal and economical costs (decreased flexibility, time consuming and long distances). Advantages with receiving PaP including organized exercise were the individualized counseling and adjusted exercise as well as support forms other participants.

7.1 Result discussion

The present evaluation showed that there was a wide range of individuals who choose to be active in organized exercise. There was a broad distribution in cause for receiving PaP, age, education and main occupation. In this study, like in most other Swedish health care evaluations, the majority of participants were middle-aged women (41,56). This is partly due to that more women visit the Swedish primary health care (35). Another reason can be that women receive PaP to a higher degree than men (56), although several studies show that there is no differences between increase in physical activity or adherence between men and women (39,41). Almost half of the study population received their prescription for multiple reasons and the most mentioned reasons were musculoskeletal disorders and overweight. This highlights the wide use of PaP and the advantage that physical activity may influence several diseases and conditions (6). It seems like this study population, active in organized exercise, was similar to earlier Swedish evaluations of PaP that also included individuals active in daily life activities (41,56). This indicates that personal characteristics are not determining for being active in organized exercise.

According to our knowledge there are few Swedish studies evaluating how the participants experience the support from the exercise organizers. This evaluation showed that the majority was satisfied with the support and do not wish for any further support. The high satisfaction level can be due to the exercise organizers positive attitude to the PaP-model and individuals receiving PaP. Earlier Swedish evaluations show that exercise organizers state that they have an important role in motivating and supporting the individuals to become more physically active. Several exercise organizers have developed adjusted activities and subsidized prices for individuals with PaP (37).

A large part of the study population got some kind of support (mainly written) from the health care center when they received their prescription. Of those, 60% were satisfied with the support. Several individuals did mention the need of longer and more frequent support. Participants stated that the knowledge of being followed-up encouraged them to exercise. By follow-up the health care professionals get an indication of whether the prescription had the intended effect or not. The follow-up also makes it possible to modify the activity if needed. For example some individuals have to change activity if it does not work and some individuals can increase activity level because of improved capacity (71). The importance of follow-up in order to promote physical activity is not only requested by the participants it is also highlighted in the new guidelines of disease prevention from the National Board of Health and Welfare (72). By follow-up the health care professionals demonstrate that the prescription of physical activity is as important as any other medical treatment (71). Several individuals stated that their health care professional's attitude towards PaP and their positive attitude to what the individual can do in order to affect their own health motivated them to become more physically active.

The greater part of the study population were active in multiple activities at all three measuring times. This high proportion might be due to the increased awareness of the importance of regular physical activity, and that even activities at moderate intensity performed during a shorter interval might improve health (14).

In contrast to other Swedish studies of PaP, there was no significant increase of physical activity level in leisure time (41). There might be two reasons for this. First, an earlier evaluation has shown that individuals active in facility-based activities had a lower increase in physical activity than individuals active in daily life activities (56). This might be applicable to this study since facility-based activities are similar to organized activities. The other reason for the low increase of physical activity can be the high self-reported activity level at baseline. Leijon *et al* showed that individuals with the lowest activity level at baseline have the largest increase in physical activity (43). Out of the participants answering the question at all three times, 23% reported that they were active in moderate activities at baseline. This is quite high and close to the national level where 24% reported they are active in moderate activities (personal communication, Ann-Sofie Karlsson, Swedish National Institute of Public Health, November 4, 2010). At follow-up, individuals active in moderate activities increased over national levels to 35% at the three month follow-up and to 30% at the six month follow-up. Despite that there was no significant increase in physical activity level within the total group. Individuals with the lowest activity level at baseline, sedentary or light activity increased their activity level significantly at the six month follow-up.

The present study supports the result of a previous study showing that PaP had a positive effect on the readiness to adapt and maintain physical activity according to the stages of the transtheoretical model (41). Out of the responding participants at three and six month follow-up 25% and 30% respectively increased to a more active stage. There was a significant increase in the stage maintenance at both follow-up sessions. At baseline 14% were classified to the stage maintenance. At three and six month follow-up the amount increased and was close to the European average, 29% vs 30%, although

it was still lower than the Swedish national level of 35%. The amount of individuals classified to the stage precontemplation at baseline were two percent, this is much lower than national levels of 20% (51). This indicates that health care professionals were successful in not describing PaP to individuals in the precontemplation stage. Those individuals were probably in a need of more time and greater support from the health care sector before receiving PaP. All individuals are in different need of support. It is important that the prescriber takes the patient's total life situation, self-efficacy, motivation and interests into account when prescribing physical activity.

The total study population at baseline reported a high degree of sedentary time with a median of seven hours per day, compared to other Swedish evaluations with a median of five hours per day (35,73). At follow-up sedentary time decreased and the levels were closer to national levels with 5 hours/day at the three month follow-up and 6 hours/day ($p \leq 0.01$) at the six month follow-up. The decreased sitting time is supported by the question concerning physical activity level in leisure time. The amount of individuals that reported the lowest physical activity level in leisure time, sedentary, decreased from 17% at baseline to 10% after six months. This means that sedentary time decreased below the national level of 13% (personal communication Ann-Sofie Karlsson, November 4, 2010). The fact that individuals significantly decreased total sitting time from baseline to six month follow-up indicates that the prescription is an effective method to influence individuals' sedentary behavior.

The prescription might have influenced the individuals' motivation, awareness and knowledge of physical activity and health. Although there were small differences in physical activity in leisure time, there was a positive movement through the behavioral stages and a significant decrease in sedentary time. This indicates that Physical activity on Prescription in primary health care might be a good method to improve public health in the Nordic countries. The primary health care reaches a large part of the population (23), and through the prescription they might affect sedentary behavior and improve public health.

In this study a greater part reported adherence to the prescription at the three and six month follow-up. These results are similar to other Swedish evaluations with long and short time follow-ups (38,39). This high adherence rate was as good as other treatments of chronic diseases (40). It is shown that individuals with a higher activity level at baseline (like in this study) adhere to the prescription to a higher degree. Probably because those individuals already had established a habit of engaging in physical activity and they did not have to make such large behavioral changes (39).

The most mentioned factors facilitating adherence were similar to earlier evaluations of PaP in Sweden as well as factors influencing activity level in the everyday life. These include that they already had made up their mind and perceived positive effects. Other important factors were enjoyment and improved knowledge about the importance of physical activity on health (38,48,74). Knowledge of these factors is important for the success of those who administer PaP in the clinical setting.

Many participants mentioned illness, pain and lack of motivation as factors complicating adherence. The question is, can these individuals be identified and supported at an earlier stage by regular monitoring and working in closer cooperation with the exercise organizer. The social cognitive theory, which emphasizes the importance of the individuals "self-efficacy" to make a behavior change suggest that this could be done. Self-efficacy could be increased by using incremental goal setting (25,47). Regular contact between the patient and the prescriber (or PaP-coordinator) makes it possible to make a careful start and then gradually increase physical activity level. By reaching the goals, the individual's self-efficacy may increase. Closer cooperation between the exercise organizer and health care sector would probably lead to organized activities with assured quality. Exercise organizers have asked for closer cooperation to increase their knowledge and to get feedback on their work (37).

Most participants were positive to receiving PaP. There are some advantages and disadvantages with PaP involving organized exercise. Disadvantages are economical costs and decreased flexibility. An example of decreased flexibility is that the activities are only given at specific, not always suitable, times and that some have to travel long distances to get to the exercise organizers. The exercise organizers' availability may vary throughout the year which can complicate regular exercise during various seasons. Organized exercise does, according to this evaluation, have several advantages. It contributes to individualized instructions, adjusted exercise and feedback from the exercise organizer as well as support from other participants. These factors are important in order to promote physical activity. Hagberg *et al* especially highlighted the social interaction and the support from other participants as important parts in order to make the exercise more enjoyable (74). Individuals who are unmotivated or have low "self-efficacy" may benefit of organized exercise in the beginning. Both daily life activities and organized exercise have their advantages and disadvantages which can be weighted against each other. When deciding form of activity several different aspects must be taken into consideration. According to the socio ecological model, recreation, transport, occupation, and household are the domains of active living (53). All these domains have to be taken into account when prescribing physical activity. For a person with time or transport limitations daily life activities might be the most suitable choice. Organized activities and activities in the daily life are both effective and should be viewed as complementary approaches in the promotion of physical activity.

7.2 Methodological considerations

The study is conducted in the clinical practice; patients in the primary health care received the prescription from their health care professional as a part of the health care routine. An observational study was relevant in order to evaluate the effectiveness of an intervention, in this case Physical activity on Prescription including organized exercise (75-77). The disadvantage with the present evaluation is the lack of control group, which makes it difficult to determine the exact effect of the intervention. There was a risk for the Hawthorn effect meaning that the intervention group increases their activity, or estimates a higher activity level, when they know that they are under observation

(78). However, the results concerning sedentary time were strengthened by a randomized controlled trial (44). The fact that the evaluation is based on an observation of the everyday practice increase the external validity.

Questionnaires regarding physical activity give a self-rated picture of the level of activity. It may be influenced by the individual's memory or expectation, in other words recall and desirability bias (78). Despite this, questionnaires are a feasible and realistic method in large populations as to minimize the burden of work load for the health care units and the participants (18,19). The questions concerning physical activity in leisure time, sedentary behavior and readiness to become more physically active all have an acceptable level of reliability and validity and were all used before in national and international studies (50,63,66). Matthews *et al* showed that there are seasonal differences in physical activity level (55). In this study patients were collected prospectively during seven months. This may decrease the risk that seasonal changes affect the result.

This study was based on voluntary participation which might cause selection bias. It is possible that individuals who are more motivated to increase their physical activity level may agree to participate in the evaluation to a higher degree. However, the voluntary participation is an ethical requirement. Individuals that are not ready to become more physically active should not be forced to receive Physical activity on Prescription (35). A common problem with health promoting surveys is that they often lack information about how many patients that were asked initially about their willingness to participate in the evaluation. In the present evaluation we know that 48 patients, 63% women, did not fulfill the inclusion criteria or did not give their consent to participate.

A disadvantage with a clinical observation study is the lack of control of surrounding circumstances. The use of PaP decreased during the fall 2009 because of the national vaccination of the H1N1 influenza virus. This had an impact on the collection of participants and the study population was quite small (n=98). Despite this, the evaluation involves a diverse study population regarding *e.g.* age, socioeconomic status (education and main occupation) and reason for prescribed prescription. This reflects the wide distribution of individuals that can receive PaP in order to increase their physical activity (77). The drop-out rate was 20% at the three month follow-up and 28% after six months. In addition to the overall drop-out there was an internal drop-out due to various numbers of responds to each question. The conservative intention to treat method was used to compensate for drop out.

It is difficult to measure sedentary time and there are just a few Swedish published studies that have been evaluating sedentary time in larger populations (16,44). In this study almost half of the study population chose the option "do not know/can not estimate". This problem has also been seen in earlier evaluations (44). The question was used anyway because of the importance of sedentary time for public health, and that it to the authors knowledge, are no other better questions estimating sedentary time (79,80).

There are too few participants from the various counties to make specific conclusions for each unit. However, this was not the purpose of the evaluation. The purpose was to evaluate the effectiveness of PaP including organized exercise and increase the generalizability. The heterogeneous participating units and the local differences of the PaP-model strengthen the external validity (77).

7.3 Future research and clinical implications

The importance of health promoting and preventive work in the health care sector is emphasized in national and international publications (20,21). The knowledge of the relation between sedentary behavior and several non-communicable diseases highlights the importance of increasing activity level in the population (1-3). The lack of good instruments to measure sedentary behavior emphasizes the importance of developing a more valid and reliable measurement in coming research. The present study indicates that PaP including organized exercise can be a method in health care sector to affect the sedentary behavior for at least six months. Despite this, it is important to remember that it takes time to make behavior changes and there is a need for studies with a longer follow-up.

The participants appeared satisfied with the initial support from the health care sector, but there was a need for more regular support during a longer time. As in previous studies the most mentioned reasons to not adhere to the prescription were illness/pain or lack of motivation (35,56). By regular follow-up those individuals could be captured and supported at an early stage. The health care sector needs to consider how to support the participants and facilitate an established behavioral change. There is a need for further studies in the clinical setting determining for how long and what kind of support (phone calls, letters, e-mails or monitoring visits) is needed.

Exercise organizers are positive to be a part of the PaP-model (37). It appears that they have developed their activities successfully and that the majority of the study population was satisfied with their support. A closer cooperation and feedback from the health care sector would probably facilitate and improve their organization further. The exercise organizers need to consider how to support participants all year around. Can any other form of exercise be offered during the summer season? Can clear and encouraging information be sent out to participants before a new semester starts?

Also, given the resources it would be desirable to study a larger study population and evaluate if there is any correlation between adherence and type of organized activity.

8. CONCLUSIONS

Insufficient physical activity is a public health problem in the Nordic countries. Physical activity on Prescription is a commonly used method in the health care sector in order to encourage individuals to increase their activity level. This study indicates that PaP involving organized exercise can decrease sedentary behavior. This is an important factor in promoting public health. A large portion of the participants mention that PaP involving organized exercise is a good method to get started and continue with physical activity. Advantages with organized exercise are individualized instructions, adjusted exercise and support from other participants. Areas with a need of further development and discussion are; the need for longer term follow-up and the availability of activities.

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Appendix 1: Questionnaire at baseline

Undersökningen om fysisk aktivitet på recept i form av organiserad träning

1. **Är Du:** Man Kvinna
2. **Hur gammal är Du:** 18-29 år 30-39 år 40-49 år
 50-59 år 60-69 år 70 år eller äldre
3. **Hur lång är Du:**centimeter
4. **Hur mycket väger Du:**kg

5. Är Du:

- Gift/sambo
 Särbo
 Singel
 Änka/änkling

6. Vilken utbildning har Du:

- Förgymnasial utbildning
 Gymnasieutbildning
 Eftergymnasial utbildning 3 år eller mindre
 Eftergymnasial utbildning mer än tre år

7. Vad är Du för närvarande:

- Student
 Heltidsanställd
 Deltidsanställd på grund av ohälsa
 Deltidsanställd på grund av annan orsak än ohälsa
 Pensionerad
 Arbetsökande
 Sjukskriven

Din fysiska aktivitetsnivå idag

8. Fysisk aktivitet på Ditt arbete

A. Hur stor del av arbetsdagen har Du stillasittande arbete?

Avser hur mycket Du rör Dig i Ditt arbete. Stillasittande kan även innebära stilla stående.

- Sitter nästan hela dagen
 Stillasittande ungefär halva dagen

- Stillasittande mindre än halva dagen
- Sitter inte alls

B. Hur fysiskt ansträngande är Ditt arbete?

- Mycket lätt
- Lätt (t ex lätt industriarbete, affärsbiträde, lärare)
- Ansträngande (t ex snickare, lokalvårdare, brevbärare, sjukvårdsbiträde)
- Mycket ansträngande (t ex tyngre skogsarbete eller byggnadsarbete)

9. Aktiv transport

A. Brukar Du cykla eller gå till/från Din dagliga sysselsättning eller arbete?

Räkna även med om du cyklar/går del av vägen!

- Nej
- Mindre än 15 minuter sammanlagt per dag
- 15-30 minuter sammanlagt per dag
- 30-60 minuter sammanlagt per dag
- Över 60 minuter sammanlagt per dag

B. Hur många dagar per vecka brukar Du cykla eller gå i rask takt till/från Din dagliga sysselsättning eller arbete?

- 0 dagar per vecka
- 1-2 dagar per vecka
- 3-4 dagar per vecka
- 5 eller fler dagar per vecka

10. Hur fysiskt aktiv är Du på fritiden?

Hur mycket har Du rört Dig och ansträngt Dig kroppsligen på fritiden under **det senaste året?**

Om Din aktivitet varierar mellan t ex sommar och vinter, så försök att ta ett genomsnitt.

OBS! Kryssa endast i ett alternativ.

Stillasittande fritid

Du ägnar Dig mestadels åt läsning, TV, bio eller annan stillasittande sysselsättning på fritiden. Du promenerar, cyklar eller rör Dig på annat sätt mindre än 2 timmar i veckan

Lätt motion på fritiden

Du promenerar, cyklar eller rör Dig på annat sätt under minst 2 timmar i veckan oftast utan att svettas. I detta inräknas också gång eller cykling till och från arbetet, söndagspromenader, ordinarie trädgårdsarbete, fiske, bordtennis, bowling mm

Måttlig, regelbunden motion på fritiden

Du motionerar regelbundet 1-2 gånger per vecka, minst 30 minuter per gång med löpning, simning, tennis, badminton eller annan aktivitet som gör att Du svettas

Regelbunden motion och träning

Du ägnar Dig åt löpning, simning, tennis, badminton, motionsgymnastik eller liknande vid 3 eller fler tillfällen per vecka. Varje tillfälle varar minst 30 minuter per gång och Du blir svettig

11. Hur lång tid har Du per dag under de senaste 7 dagarna tillbringat sittande i samband med arbete, studier, i hemmet och på Din fritid?

Försök uppskatta hur många timmar i genomsnitt. Exempel på detta är tid vid skrivbordet, hemma hos vänner, att sitta och äta eller prata, och att sitta och se på film eller TV.

..... timmarmin Vet inte/osäker

12. Vilket av påstående nedan beskriver bäst vad Du tycker om Din nuvarande nivå av fysisk aktivitet?

Jag är för närvarande...

- inte särskilt fysisk aktiv och jag har inte för avsikt att bli mer fysiskt aktiv under de närmaste 6 månaderna
- inte särskilt fysisk aktiv, men jag har funderat på att öka min fysiska aktivitetsnivå under de närmaste 6 månaderna
- inte särskilt fysisk aktiv, men jag är fast besluten på att öka min fysiska aktivitetsnivå under de närmaste 6 månaderna
- fysiskt aktiv, men jag har bara varit det de senaste 6 månaderna
- fysiskt aktiv och jag har varit det längre än 6 månader
- Jag brukade vara fysiskt aktiv för ett år sedan men de senaste månaderna har jag varit mindre aktiv
- Vet ej

När du fick Ditt recept på fysisk aktivitet

13. Vem skrev ut Ditt recept på fysisk aktivitet?

- Läkare
- Sjuksköterska
- Sjukgymnast
- Annan
- Vet ej

14. Varför fick Du ett recept på fysisk aktivitet?

(Flera svarsalternativ kan anges)

- Övervikt

- Högt blodtryck
- Höga blodfetter
- Hjärt/kärlsjukdom
- Diabetes
- Psykisk ohälsa
- Problem i rörelseorgan/ rygg (inklusive smärta)
- I förebyggande syfte (vid fysisk inaktivitet)
- Annat
- Vet ej

15. Vilken typ av aktivitet blev Du ordinerad?

(Flera svarsalternativ kan anges)

- Promenader
- Stavgång
- Jogging
- Simning
- Styrketräning
- Boll/racketsport
- Vattengympa
- Gympa/aerobic/step up etc.
- Specifik gruppträning för individer med fysisk aktivitet på recept
- Annan form av specifik gruppträning, exempelvis gymnastik arrangerad av patient- eller pensionärsförening, ange vad
- Yoga/pilates etc.
- Annat
- Vet ej

Stort Tack för Din medverkan!

Appendix 2: Questionnaire at three and six month follow-up

Undersökning om fysisk aktivitet på recept

Tre månaders uppföljning

Din fysiska aktivitetsnivå idag:

1. Hur fysiskt aktiv är du på fritiden?

Hur mycket har Du rört Dig och ansträngt Dig kroppsligen på fritiden under det senaste året?

Om Din aktivitet varierar mellan t ex sommar och vinter, så försök att ta ett genomsnitt. OBS! Kryssa endast i ett alternativ

Stillasittande fritid

Du ägnar Dig mestadels åt läsning, TV, bio eller annan stillasittande sysselsättning på fritiden. Du promenerar, cyklar eller rör Dig på annat sätt mindre än 2 timmar i veckan

Lätt motion på fritiden

Du promenerar, cyklar eller rör Dig på annat sätt under minst 2 timmar i veckan o fast utan att svettas. I detta inräknas också gång eller cykling till och från arbetet, söndagspromenader, ordinarie trädgårdsarbete, fiske, bordtennis, bowling mm

Måttlig, regelbunden motion på fritiden

Du motionerar regelbundet 1-2 gånger per vecka, minst 30 minuter per gång med löpning, simning, tennis, badminton eller annan aktivitet som gör att Du svettas

Regelbunden motion och träning

Du ägnar Dig åt löpning, simning, tennis, badminton, motionsgymnastik eller liknande vid 3 eller fler tillfällen per vecka. Varje tillfälle varar minst 30 minuter per gång och Du blir svettig

2. Vilken typ av organiserad aktivitet utför Du för närvarande?

Flera svarsalternativ kan anges

Promenader

Stavgång

Jogging

Simning

Styrketräning

Boll/racketsport

Vattengympa

Gympa/aerobic/step up etc.

- Specifik gruppträning för individer med fysisk aktivitet på recept
- Annan form av specifik gruppträning, exempelvis gymnastik arrangerad av patient- eller pensionärsförening, ange vad

-
- Yoga/pilates etc.
 - Annat
 - Vet ej

3. Stillasittande på fritiden

Hur lång tid har Du per dag under de senaste 7 dagarna tillbringat sittande i samband med arbete, studier, i hemmet och på Din fritid?

Försök uppskatta hur många timmar i genomsnitt. Exempel på detta är tid vid skrivbordet, hemma hos vänner, att sitta och äta eller prata, och att sitta och se på film eller TV.

..... timmarmin Vet inte/osäker

4. Fysisk aktivitet på Ditt arbete/dagliga sysselsättning

A. Hur stor del av arbetsdagen har Du stillasittande arbete?

Avser hur mycket Du rör Dig i Ditt arbete. Stillasittande kan även innebära stillastående.

- Sitter nästan hela dagen
- Stillasittande ungefär halva dagen
- Stillasittande mindre än halva dagen
- Sitter inte alls

B. Hur fysiskt ansträngande är Ditt arbete?

- Mycket lätt
- Lätt (t ex lätt industriarbete, affärsbiträde, lärare)
- Ansträngande (t ex snickare, lokalvårdare, brevbärare, sjukvårdsbiträde)
- Mycket ansträngande (t ex tyngre skogsarbete eller byggnadsarbete)

5. Aktiv transport

A. Brukar du cykla eller gå till/från Din dagliga sysselsättning eller arbete?

Räkna även med om du cyklar/går del av vägen!

- Nej
- Mindre än 15 minuter sammanlagt per dag
- 15-30 minuter sammanlagt per dag
- 30-60 minuter sammanlagt per dag
- Över 60 minuter sammanlagt per dag

B. Hur många dagar per vecka brukar Du cykla eller gå i rask takt till/från Din dagliga sysselsättning eller arbete?

- Ingen dag
- 1-2 dagar per vecka
- 3-4 dagar per vecka
- 5 eller fler dagar per vecka

6. Vilket av påstående nedan beskriver bäst vad Du tycker om Din nuvarande nivå av fysisk aktivitet?

Jag är för närvarande...

- Inte särskilt fysisk aktiv och jag har inte för avsikt att bli mer fysiskt aktiv under de närmaste 6 månaderna
- Inte särskilt fysisk aktiv, men jag har funderat på att öka min fysiska aktivitetsnivå under de närmaste 6 månaderna
- Inte särskilt fysisk aktiv, men jag är fast besluten på att öka min fysiska aktivitetsnivå under de närmaste 6 månaderna
- Fysiskt aktiv, men jag har bara varit det de senaste 6 månaderna
- Fysiskt aktiv och jag har varit det längre än 6 månader
- Jag brukade vara fysiskt aktiv för ett år sedan men de senaste månaderna har jag varit mindre aktiv
- Vet ej

Fysisk aktivitet på Recept:

7. Har Du följt den ordination på fysisk aktivitet som du blev ordinerad?

Välj det alternativ som stämmer bäst av A, B eller C och svara sedan på de aktuella följdfrågorna

A Ja, jag har följt ordinationen på receptet och varit aktiv i de aktiviteter som jag blev ordinerad.

B Ja, jag har följt ordinationen på receptet, men har ändrat aktivitet till:

.....

Om DU följt ordinationen på receptet, vad var avgörande för Ditt beslut att bli mer fysiskt aktiv?

Flera svarsalternativ kan anges

- Hade bestämt mig innan
- Samtalet vid förskrivningen av mitt recept
- Det skriftliga receptet på fysisk aktivitet
- En ökad kunskap om nyttan av fysisk aktivitet
- Stöd från anhöriga och vänner
- Positiva effekter exempelvis bättre provvärden, minskade symtom mer ork
- Det är roligt
- Grupptillhörigheten
- Träningsanläggningens/

Aktivitetsarrangörens bemötande

Annat:

Om Du inte följt ordinationen på receptet vad var avgörande

Flera svarsalternativ kan anges

Sjukdom, skada/ökad värk, ange i vad.....

- Saknade motivation
- Tidsbrist
- Saknat stöd från anhöriga och vänner
- Har inte hittat lämplig aktivitet

C Nej, jag har inte följt ordinationen.

- Tiderna då träning erbjöds passade inte
- Träningen var för lätt
- Träningen var för hård
- Trivdes inte i gruppen
- Kändes som att jag inte passade in
- Årstiden/vädret
- Ekonomiska begränsningar
- Annat:

8. Har Du fått något extra stöd från vården för att komma igång och följa ordinationen på receptet?

- Nej
- Ja, skriftlig information/råd
- Ja, lista över träningsanläggningar
- Ja, genom uppföljande telefonsamtal
- Ja, genom planerat återbesök
- Ja, annat,.....

9. Skulle Du behövt något ytterligare stöd ifrån vården för att bli mer fysiskt aktiv?

- Nej
 - Vet ej
 - Ja, ange vad
-
-

10. Informerade Du träningsanläggningen/aktivitetsarrangören om att Du var där på grund av att du fått fysisk aktivitet på recept?

- Ja, muntligt
- Ja, skriftligt
- Nej

11. Fick Du stöd av träningsanläggningen/aktivitetsarrangören som du gick till?

- Nej
- Ja, ange vad

12. Skulle Du behövt något ytterligare stöd ifrån träningsanläggningen/aktivitetsarrangören för att bli mer fysiskt aktiv?

- Nej
 - Vet inte
 - Ja, ange vad
-
-
-
-

13. Hur har du upplevt att få fysisk aktivitet på recept till en organiserad aktivitet?

.....

.....

Tack för Din medverkan!

