

Urs Mäder^a, Jürg Niesper^b, Nicole Ruch^a, Martin Rööslī^c, Brian W. Martin^{a,d}

^a Swiss Federal Institute of Sport, Magglingen, Switzerland

^b Former Sport Officer Territorial Division 4, Swiss Army

^c Institute of Social and Preventive Medicine, University of Basel, Switzerland

^d Institute of Social and Preventive Medicine, University of Zurich, Switzerland

Acceptance and feasibility of semi-standardised physical activity counselling in the conscript Swiss Army

Abstract

A semi-standardised physical activity counselling intervention was developed for annual repetition courses of the Swiss Army, consisting of poster presentations, group discussions and the selection of individual behavioural targets. Feasibility of the intervention was good, acceptance also. According to telephone interviews carried out after 12 weeks, similar changes in moderate intensity physical activity behaviour were observed in three intervention and three control units with 175 and 167 soldiers respectively. There were indications for effects on vigorous intensity activities and strength training, but they did not quite reach statistical significance. Adaptations have been made in the questionnaires and the intervention material. We believe that the intervention can make an important contribution to addressing physical inactivity in a militia army.

Zusammenfassung

Eine halbstandardisierte Bewegungsberatung wurde zur Durchführung in jährlichen Wiederholungskursen der Schweizer Armee entwickelt. Sie bestand aus Posterpräsentationen, Gruppendiskussionen und der Festlegung individueller Bewegungsziele. Machbarkeit und Akzeptanz waren gut. 12 Wochen nach der Intervention wurde Telefonbefragungen durchgeführt. Gemäss diesen waren die Veränderung im Bewegungsverhalten mittlerer Intensitäten bei den drei Interventionseinheiten mit 175 und den drei Kontrolleinheiten mit 167 Soldaten vergleichbar. Es gab Hinweise für eine Wirkung auf Ausdaueraktivitäten und Krafttraining, diese waren aber nicht ganz statistisch signifikant. Bei Fragebogen und Interventionsmaterialien sind Anpassungen vorgenommen worden. Wir gehen davon aus, dass dieser Ansatz einen wichtigen Beitrag zur Lösung des Problem des Bewegungsmangels in einer Milizarmee liefern kann.

Schweizerische Zeitschrift für «Sportmedizin und Sporttraumatologie» 57 (2), 81–83, 2009

Introduction

Switzerland has a militia army. Most conscripts leave the army after the 18-week base training to return from their reserve status for annual repetition courses of 3 weeks. During the base training recruits receive a comprehensive physical training and have the opportunity to improve their physical fitness. However, subsequent annual repetition courses are too short to influence their performance level in any relevant way. Therefore, fitness of most soldiers is essentially determined by their habitual physical activity behaviour during the remaining 49 weeks of the year. As nearly two thirds of the Swiss population do not achieve current physical activity recommendations (Martin et al, 2009), it can be assumed that also a substantial part of young men in the Swiss Army is insufficiently active.

This was also the interpretation of the sport officer of a territorial division in Eastern Switzerland when he was concerned about diminishing levels of physical fitness in the repetition courses of his units. In these courses, soldiers underwent standardised physical fitness testing and received individual feedback on their performance. However, this was not combined with appropriate counselling and it did not succeed in motivating the less active individuals to change their behaviour until the next repetition course. The sport officer therefore contacted physical activity promotion experts at the then Federal Sport School in Magglingen. Together they devel-

oped a physical activity promotion intervention that could be fully integrated in the existing military training routine during annual repetition courses. It consisted of a semi-standardised physical activity counselling intervention and was combined with the established annual fitness test.

The purpose of this short report is to present results on the feasibility and acceptance and preliminary data on the effectiveness of the semi-standardised physical activity counselling in a military setting.

Methods

Development and preparation of the intervention

Integrating experiences from the civil population of Switzerland (Titze et al, 2001; Martin et al, 2001) and the principles of the trans-theoretical model of behaviour change (Prochaska and Velicer, 1999), an intervention was designed that targeted soldiers in group sessions, for which participants were selected according to their habitual physical activity behaviour. In the sessions, they were provided with information and motivated to set themselves appropriate behavioural targets. A manual for instructors, ten different posters to be used in the group discussions and a brochure to be distributed to the soldiers were produced. A procedure was defined

that allowed applying both the counselling intervention and the fitness test within 60 minutes, the time slot usually allocated to the fitness test alone. A staff of sport instructors was created based on their civil background in physical education or health promotion and they were trained in the intervention.

Procedure of the semi-standardised physical activity counselling

Before the counselling session, all soldiers had to answer a short written physical activity questionnaire about their habitual physical activity behaviour. It contained items for classification in the stages of change (Prochaska and Velicer, 1999) for the behavioural target of half an hour of moderate intensity physical activity on most days of the week. In addition, it contained questions on the weekly frequency of vigorous intensity activity sessions of 20 minutes or more and on the weekly frequency of strength training. Participants were classified as active if they reported meeting the minimal moderate intensity recommendations mentioned above or the three times per week 20 minute vigorous intensity recommendations (Martin et al, 2009).

While the active participants attended the fitness assessment first with the sport instructor of the unit, the inactive group began with the semi-standardised physical activity counselling session which took about 30 minutes. The counselling procedure started with a poster presentation and discussion on the importance of regular physical activity and continued with information on how to integrate physical activity into the daily routine. Then the brochures were distributed and soldiers were counselled in either selecting an individually appropriate behavioural target from a list provided in the brochure or in defining an individual one. Afterwards, the inactive group attended the fitness assessment, while the active participants passed through the counselling within the remaining 30 minutes. Their poster presentation and discussion was more focussed on training methods, accident prevention and optimal regeneration. They also received the brochure and selected individual behavioural targets.

Formal evaluation of acceptance

The acceptance of the counselling approach in the military setting was evaluated in a staff unit of Division VIII during the annual repetition course in 2003. The 70 soldiers present during the course were fully informed about the survey and gave their written informed consent. They completed their questionnaire immediately after the physical activity counselling session. The questionnaire consisted of nine closed-ended items on usefulness, adequacy, applicability, and quality of the counselling and the materials. Additionally, the intention to increase physical activity on the basis of the information received was determined.

Evaluation of feasibility and effectiveness

The feasibility and effectiveness of the counselling approach was evaluated during the annual repetition course of six infantry units of the Territorial Division IV of the Swiss Army in 2001. The soldiers were fully informed about the study and the volunteers gave their written consent. The six units were randomly assigned to the intervention and the control group. Both groups answered the short physical activity questionnaire, which also included questions on age, body height and weight. The intervention group attended the physical activity counselling and the fitness test. The control group answered the questionnaire, received the brochure, selected an individual physical activity target and participated in the fitness test. Twelve weeks after the annual repetition courses, the members of both groups answered the questionnaire again on the telephone.

Statistical Analyses

Data were presented as means \pm standard deviations or as proportions. For the evaluation of the changes in moderate intensity physical activity within the intervention and the control group, pro-

portions of inactive individuals were compared with the McNemar-Test. Additionally changes between the groups were tested by the method of Kolmogorov and Smirnov. The Wilcoxon signed-rank test was used to determine the level of significance for the changes in the reported vigorous intensity activity and strength training frequencies before and after the intervention within both groups. Differences in changes between the groups were analysed with the Man-Whitney U Test. Statistical analyses were done with SPSS version 16 (SPSS Inc. Chicago, Illinois, USA).

Results

Participants

Sixty-two of the 70 soldiers present in the acceptance evaluation completed the questionnaires. All of the 342 infantry soldiers present in the feasibility and the effectiveness evaluation participated in both the intervention and in the telephone interview after 12 weeks. 175 of them (age = 28 ± 7 years, BMI = 24 ± 3) were assigned to the intervention group and 167 (age = 29 ± 5 years, BMI = 24 ± 3) to the control group.

Feasibility

Within the given time frame of 60 minutes, it was possible to conduct the tailored semi-standardised physical activity counselling intervention among inactive and active soldiers by combining it with the annual fitness test. However, the short physical activity questionnaire had to be answered before the intervention. Therefore, a few additional minutes were needed to assign the soldiers to the respective activity groups.

Acceptance

37.0% of the participants rated the usefulness of the intervention as rather to very useful. The majority of the soldiers (85.3%) believed that the counselling was an appropriate approach in the military setting. The quality of the counselling and the applicability of the used and distributed material were rated as rather good and good (78.3% and 95.8%, respectively). 53.3% of the participants declared their intention to be more active in the future after the semi-standardised counselling. *Figure 1* gives an overview of the formal acceptance evaluation results.

Effectiveness

After 12 weeks, the proportion of soldiers reporting less moderate intensity activity than recommended decreased from 50.3% to 37.3% ($p < 0.01$) and from 47.9% to 41.9% ($p < 0.01$) in the intervention and control group, respectively. However, the changes between both groups were similar ($p=0.80$). The number of days

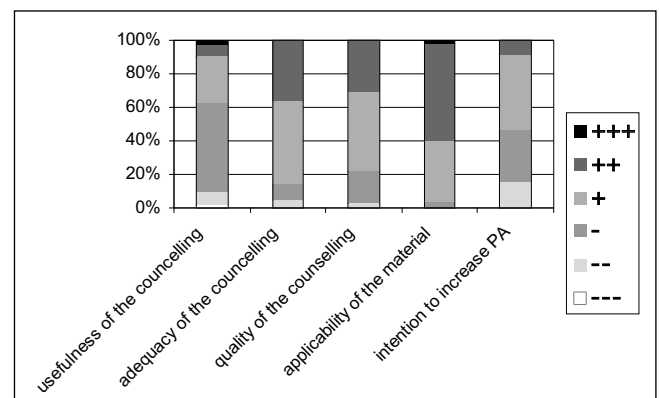


Figure 1: Acceptance of the semi-standardised physical activity counselling approach, PA: physical activity, n=62

with vigorous exercise increased from 2.1 to 2.4 per week ($p < 0.01$) in the intervention group, while it remained stable for the control group (2.3 and 2.2 per week, $p=0.77$). More strength trainings were reported in the intervention group (on 0.6 to 0.9 days per week, $p=0.01$), while no difference was found in the control group (0.8 and 0.8 days per week, $p=0.33$) (table 1). However, the comparison of the changes between the intervention and control group did not quite yield statistically significant differences (table 1).

When the data of the inactive participants of both groups were analysed only, significant differences were found within the groups over the study period. However, the changes between the groups did not achieve the level of statistical significance.

Discussion

The semi-standardised physical activity counselling was applied successfully in the military training routine, without requiring additional time. Furthermore, the approach and the presented and distributed material achieved a high acceptance among the participating soldiers. The low agreement concerning the usefulness of the intervention should be interpreted in view of the fact that an important proportion of the soldiers were already sufficiently active and therefore probably really did not need the intervention. Preliminary data on general physical activity behaviour over 12 weeks do not indicate an effect of the intervention on moderate intensity physical activity. However, the counselling resulted in a nearly statistically significant increase of vigorous intensity physical activity and strength training, forms of exercise that may be particularly attractive to young men.

The physical activity questionnaire and its application were chosen mainly in view of the needs of the intervention, with the hope of optimal participation, and not with respect to optimal measurement results. For moderate intensity activities, it assessed only two categories of behaviour, for vigorous intensity and strength training it assessed only frequency and not duration of sessions. These facts as well as the written application before and the telephone application after the intervention may have made it difficult to measure small changes. More detailed questionnaires and objective measurements of physical activity should be used to achieve more reliable assessments of the effectiveness of interventions.

The results of the different evaluation steps have already resulted in a revision of the intervention material and in the elaboration of a new short questionnaire providing continuous data for both

Physical activity behaviour	reported change in intervention group		reported change in control group		p intervention vs. control
		p		p	
Vigorous intensity	0.3 d/w	0.01	-0.1 d/w	0.77	0.15
Strength training	0.3 d/w	0.05	0.0 d/w	0.33	0.07

Table 1: Reported changes in physical activity behaviour over the study period of 12 weeks in the intervention (n=175) and the control group (n=167). Moderate intensity activities were only assessed as categorical data and showed similar changes in both groups.

moderate intensity and vigorous intensity activities. Experts have been recruited and trained to deliver the intervention. However, in the last big structural reform of the Swiss Army many of the units involved in the project have been dissolved and the approach has not been taken up at the level of the entire army. We are convinced that the physical fitness of soldiers will still gain in importance and that an intervention like the one described in this article can make an important contribution.

Address for correspondence

Urs Mäder, Swiss Federal Institute of Sport Magglingen, CH-2532 Magglingen (E-mail: urs.maeder@baspo.admin.ch)

Literature

- Martin B.W., Mäder U., Stamm H.P., Braun-Fahrländer C. (2009): Physical activity and health – what are the recommendations and where do we find the Swiss population? *Schweiz. Z. Sportmed. Sporttraumatol.* 57 (2): 37–43.
- Martin B.W., Jimmy G., Marti B. (2001): Bewegungsförderung bei Inaktiven – eine Herausforderung auch in der Schweiz. *Ther. Umschau* 2001; 58: 196–201
- Prochaska J.O., Velicer W.F. (1997): The transtheoretical model of health behavior change. *Am. J. Health Promot.* 12: 38–48.
- Titze S., Martin B.W., Seiler R., Stronegger W., Marti B. (2001): Effects of a lifestyle physical activity intervention on stages of change and energy expenditure in sedentary employees. *Psychol. Sport Exerc.* 2001; 2: 103–116.