SHORT REPORT

Correlates of physical activity among middle-aged Finnish male police officers

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**Background**  Few studies exist on adherence to exercise within specific occupational groups.

**Aims**  This study aimed at identifying factors explaining leisure-time physical activity among middle-aged Finnish police officers.

**Methods**  Middle-aged police officers (n = 103) participated in the study in 1981 and 1996. Frequency of and adherence to leisure-time physical activity and fitness were assessed.

**Results**  The factor ‘enjoyment’ was the most powerful determinant for both physical activity and fitness, but all the factors studied accounted for only 10% of the variability. Leisure-time physical activity in 1981 correlated significantly with leisure-time physical activity in 1996.

**Conclusions**  The physical activity of the middle-aged police officers can be in part predicted from their physical activity in early adulthood. Enjoyment related to physical activity seems to be important with respect to enhancing adherence. Perhaps, being fit increases the feeling of enjoyment during exercise.

**Key words**  Determinants of physical activity; middle-age; police officers.

**Introduction**

Adherence to physical activity is the key to a lifestyle that supports health and working ability. Previous studies on adherence to physical activity have primarily concentrated on heterogeneous samples that have included men and women of different ages, professions, social classes, and levels of physical fitness and physical activity [1–5]. However, it is also important to study factors affecting physical activity within specific groups as, among others, occupational health practitioners need specific information in order to promote physical activity directed at the needs of specific occupations.

The aims of this study were (i) to identify perceived factors associated with the physical activity and fitness of middle-aged Finnish police officers according to the educational phase of the PRECEDE–PROCEED model [6] and (ii) to assess the predictive value of the level of physical activity evaluated in 1981 with respect to physical activity in 1996.

**Methods**

In a 15-year follow-up study from 1981 to 1996, the leisure-time physical activity and physical fitness of male police officers (n = 103) were assessed by a physical activity scale questionnaire and submaximal bicycle ergometer test [7]. The sample represented all students in the chief officer course of the Finnish Police academy in 1981. In 1996, five men retired, three had died and two had changed their occupation. All retired men participated in the present study of which 96 men participated both in 1981 and 1996. In 1996, factors affecting adherence to physical activity were assessed by the PRECEDE–PROCEED model (according to Green; predisposing, enabling and reinforcing factors). In 1996, the mean age of the men was 49 (range 42–61) years.

The data were processed using the SAS Microsoft statistical analysis system (SAS Institute Inc., USA).

From the 40 statements on predisposing to, enabling or reinforcing physical activity, three factors ['enjoyment' (I), 'lack of skills' (II) and 'lack of knowledge' (III)] were extracted by Principal Component Analysis. The final model contained nine statements (Table 1). Linear regression analysis was used to evaluate the relationship of the different factors with physical activity and physical fitness (Table 1).
The correlations between the assessments of physical activity made in 1981 and 1996 were calculated with the Spearman’s correlation coefficient for nonparametric data. The differences were considered significant when $P < 0.05$.

**Table 1.** The reinforcing, enabling and predisposing statements extracted for factors I (‘enjoyment’), II (‘lack of skills’) and III (‘lack of knowledge’) and their loadings

<table>
<thead>
<tr>
<th>Statement</th>
<th>Factor I, Enjoyment (Reinforcing)</th>
<th>Factor II, Lack of skills (Enabling)</th>
<th>Factor III, Lack of knowledge (Predisposing)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feel better after physical activity</td>
<td>0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feel less tired when exercising regularly</td>
<td>0.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notice one’s improved fitness</td>
<td>0.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feel satisfied after physical activity</td>
<td>0.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of skill for any form of interesting physical activity</td>
<td>0.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No possibility for suitable physical activity</td>
<td>0.89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Own illness hindrance to physical activity</td>
<td>0.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insufficient knowledge about physical activity</td>
<td></td>
<td>0.92</td>
<td></td>
</tr>
<tr>
<td>Insufficient knowledge of the health effects of physical activity</td>
<td></td>
<td>0.88</td>
<td></td>
</tr>
</tbody>
</table>

The correlations between the assessments of physical activity made in 1981 and 1996 were calculated with the Spearman’s correlation coefficient for nonparametric data. The differences were considered significant when $P < 0.05$.

**Results**

There was no relationship between age, rank, number of illnesses, smoking habits, BMI or weight and leisure-time physical activity.

The three factors predicted 9% of the variance of physical activity during the past 12 months in 1996. The standardized beta coefficients were 0.26 for factor I, $-0.11$ for factor II and $-0.15$ for factor III ($P = 0.013$, $P = 0.298$ and $P = 0.139$, respectively).

The corresponding model predicted 11% of the variance of maximal oxygen consumption in 1996. The standardized beta coefficients were 0.29 for factor I, $-0.06$ for factor II and $-0.19$ for factor III ($P = 0.013$, $P = 0.601$ and $P = 0.089$, respectively).

The correlation between factors I and II was $0.12$, between factors I and III was $0.13$ and between factors II and III was $0.13$ ($P = 0.276$, $P = 0.223$ and $P = 0.234$, respectively).

Leisure-time physical activity during the past 12 months in 1981 correlated significantly with that in 1996 ($r = 0.30$, $P = 0.004$).

**Discussion and conclusions**

The purpose of this study was to evaluate the predictors of physical activity among a very selected group of men, i.e. middle-aged police officers, thereby obtaining data for tailoring and promoting physical activity for this group as part of occupational health care. The main results suggest that enjoyment may be an important determinant of both physical activity and physical fitness. Former physical activity also seemed markedly to correlate with present physical activity.

The present sample was small but homogeneous from the point of view of profession, sex, age, ethnicity, education, employment and socio-economic factors. In this respect, this study differs from many earlier ones, which have mainly been based on larger and more non-specific samples. It seems evident that large nationwide and community-wide physical exercise programmes need the kind of knowledge that can be obtained from larger population studies. On the other hand, occupational health practitioners, for example, need knowledge pertaining to specific subgroups in order to promote a healthy lifestyle successfully.

As only 96 men of the original 103 participated in the follow-up, the present results may somewhat overestimate the level of physical activity and fitness of middle-aged police officers (‘healthy survivor’ effect) and thus also influence on the results concerning adherence to exercise.

The proportion of physically active police officers in this study was high, as 62% of them were physically active in their leisure-time at least twice a week. The most popular form of physical activity was walking [8] and, therefore, this study may add to our knowledge about the determinants of regular, moderate physical activity as highly recommended by Dishman and Sallis [1].

In previous studies [2–5], attitudes, expected health benefits, past programme participation, barriers to exercise and lack of time have been associated with physical activity. ‘Enjoyment’ has not previously been found to be related to adherence. ‘Enjoyment’ was also the only factor with a significant association with physical fitness. It may be that a certain degree of fitness is needed before a person enjoys physical activity. In that respect,
physical fitness can be considered a determinant of physical activity.

Factors ‘enjoyment’, ‘lack of skills’ and ‘lack of knowledge’ had no significant correlation with each other. Thus, these factors can be regarded as influencing physical activity independently.

Because the determinants of this study explained only about 10% of the variance in physical activity and fitness, more evidence concerning the nature of adherence to physical activity is needed before a healthy lifestyle can be successfully promoted.

However, on the basis of this study, enjoyment should be emphasized in health promotion campaigns targeted at middle-aged police officers.

Acknowledgement

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References