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Physical activity in people with axial spondyloarthritis and the impact of overall attitudes, barriers and facilitators – a cross-sectional study

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Short running title: Attitudes and barriers to physical activity in axSpA

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Conflict of interest

All authors declare that there is no conflict of interest.

Abstract

Objective: To study the association between self-reported physical activity level and overall attitudes and barriers to and facilitators of physical activity in people with axial spondyloarthritis (axSpA), and to compare health status and quality of life (QoL) in people with different levels of physical activity.

Methods: 445 members of the Danish Patient Association for Axial Spondyloarthritis completed an online survey including questions on physical activity, overall attitudes, barriers and facilitators to physical activity, health and QoL. Non-parametric tests and logistic regression analyses were performed.

Results: The response rate was 46%, median age 56 years (range 22-85) and 54% were men. In all, 23% reported low physical activity (physical activity \geq 30 minutes on a moderate intensity level \leq 1 day/week), 36% were moderately physically active (2-3 days/week) and 41% reported high physical activity (\geq 4 days/week). In a multivariate model, high physical activity was associated with a positive overall attitude ('physical activity is ok', OR 5.44, 95%CI [1.24; 23.87], and 'I like physical activity', OR 14.22, 95%CI [3.34; 60.61]), and higher disagreement with barriers to physical activity, OR 1.12, 95%CI [1.07; 1.17]). People with moderate or high physical activity levels reported better self-perceived health and QoL, compared to those with low physical activity level ($p \leq 0.003$).

Conclusion: To support changes in physical activity level in people with axSpA, health professionals need to discuss attitudes and barriers to physical activity with their clients. Barriers seem to be of greater significance than facilitators of any kind.

KEYWORDS: axial spondyloarthritis, ankylosing spondylitis, physical activity, exercise, lifestyle

1. INTRODUCTION

Axial spondyloarthritis (axSpA) is a chronic inflammatory rheumatic disease with an onset in late adolescence or early adulthood. The leading features of the disease are inflammatory back pain, asymmetrical peripheral arthritis, enthesitis and reduced joint mobility, resulting in affected health status (Sieper and Poddubnyy, 2017). The classification criteria for axSpA (Rudwaleit et al., 2009) cover patients with either radiographic or non-radiographic axSpA and include ankylosing spondylitis (AS) (Sieper and Poddubnyy, 2017). AS has a prevalence of about 0.5%, and with a male to female ratio of 2:1. Accurate numbers of incidences and prevalence of the global axSpA population are still lacking (Sieper and Poddubnyy, 2017). Comorbidities are common in axSpA due to sequelae of systemic inflammation, and the risk for cardiovascular diseases is increased (Bremander et al., 2011; Agca 2017; Zhao et al., 2019). The primary treatment goal is to maximise health-related quality of life, prevent progressive structural damage and preserve or normalise function and social participation through control of the symptoms and inflammation (van der Heijde, 2017).

In axSpA, regular physical activity should be part of disease management throughout the disease course (Rausch Osthoff et al., 2018). Recommendations to the general adult population of at least 150 minutes of moderate-intensity physical activity or 75 minutes of vigorous-intensity physical activity per week to enhance health, also apply to people with axSpA (Haskell et al., 2007; WHO, 2015; Rausch Osthoff et al., 2018). Physical activity has beneficial effects on pain, spinal mobility, physical function, general well-being and self-reported health status (Dagfinrud et al., 2008; van den Berg et al., 2012; Haglund et al., 2012 O'Dwyer et al., 2014). For cardiovascular disease prevention, aerobic exercise is needed (Haskell et al., 2007; Sveaas et al., 2014; Nystoriak and Bhatnagar, 2018). It is however well-known that a large proportion (32-42%) of people with axSpA are not engaged in sufficient physical activity to maintain health (Sundström et al., 2002; Haglund et al., 2012; Fongen et al., 2013).

Patients with axSpA are more likely to report barriers to physical activity compared with controls (Fongen et al., 2015). Barriers, such as high disease activity, fatigue, pain, stiffness, physical exertion and lack of time, all have a negative impact on physical activity level in people with axSpA (Sundström et al., 2002; Brophy et al., 2013; Fongen et al., 2015; Fabre et al., 2016; Rouse et al., 2019). The most frequently reported facilitator to increase the level of physical activity in people with axSpA is more time (Fongen et al., 2015). In addition, an

intrinsic motivation to exercise is an important facilitator for regular exercise, guided by personal interest and enjoyment in taking exercise (Brophy et al., 2013).

Many different theories are used to explain exercise behavior, the reasoned action theory states that the intention of acting has a direct effect on behaviour, and it can be predicted by attitudes (Ajzen and Fishbein, 1980). Adherence to recommendations for physical activity is influenced by the person's attitudes towards physical activity (Rhodes et al., 2009) and exercise. The reasoned action theory has shown that attitude to physical activity is an independent predictor of exercise behavior (McEachan et al, 2016). The reasoned action theory has been criticized for being a unidirectional model, which relies solely on cognition and omits other potentially important determinants of action, such as environmental influences (Sallis et al., 2008). An ecological model, where the core concept is that behavior is multifactorial, including intrapersonal and interpersonal factors, the physical environment, organizational issues, regional and government policies (Sallis et al., 2008). In this study we have combined the reasoned action theory with the ecological model to broaden the perspective. In people with axSpA, a better understanding of facilitators and barriers related not only to personal behaviour but also to environmental influences on physical activity level is needed. Thus, the primary aim was to study the association between self-reported level of physical activity and overall attitudes and barriers to and facilitators of physical activity in a Danish cohort of people with axSpA. The secondary aim was to compare self-perceived health and quality of life in people with different levels of physical activity.

2. SUBJECTS AND METHODS

The study was designed as a cross-sectional survey in collaboration with the Danish Patient Association for Axial Spondyloarthritis.

2.1 Subjects

In May 2018, 972 members of the Danish Patient Association for Axial Spondyloarthritis, all of whom had axSpA, were invited by email to participate in the survey. The deadline to respond to the survey was September 1, 2018. Reminders were sent by email on two occasions between May and September.

2.2 The survey

The survey consisted of 18 questions, which included self-reported information about diagnosis, age, sex, employment, marital status, smoking, medication, comorbidity, level of physical activity, overall attitudes towards physical activity and barriers to and facilitators of physical activity. The questions were adapted from the national questionnaire “Motion og kost - på recept” [Exercise and diet - on prescription] from Public Health, Copenhagen Municipality and the University of Southern Denmark (Roessler et al., 2005) and the questionnaire “Befolkningens motivation og barrierer for fysisk aktivitet” [Population motivation and barriers to physical activity] (Danish Health Authority, 2003). For validity purposes, all participants were asked to rate whether they considered the questions to be relevant and easy to understand, and 90% strongly agreed or agreed with this statement. The questionnaire could be completed in less than 30 minutes.

Physical activity level. Participants' physical activity level was assessed by a question: 'How often have you been physically active with moderate intensity for at least 30 minutes per day during the past year?' with five response options: never, once a week, two or three times a week, four to six times a week, or every day. The next question was: 'What kinds of exercise and physical activity did you do during the past week?' This question had 12 response options: brisk walking, Nordic walking, running or jogging, cycling or spinning, swimming, aquatic exercise, exercise supervised by a physiotherapist, exercise at a gym, flexibility training, ball games, dance or other physical activities.

Overall attitude to physical activity. The overall attitude to physical activity was assessed based on four response options: 'I do not like physical activity', 'physical activity is ok', 'I like physical activity' and 'I do not know'. The participants were asked to choose one response option only.

Barriers to and facilitators of physical activity. Questions were limited to a combination of the main perceived barriers and facilitators, as described in two Danish studies regarding the general population (Danish Health Authority, 2003; Roessler, 2015) and studies in axSpA (Sundström et al., 2002; Brophy et al., 2013; Fongen et al., 2015; Fabre et al., 2016; Rouse et al., 2019). Barriers and facilitators included intrapersonal, interpersonal, organizational and community issues, and public policies, in accordance with the ecological model (Sallis et al., 2008). Eight barriers were addressed: I do not enjoy physical activity (intrapersonal), physical activity does not improve my well-being (intrapersonal), lack of time (intrapersonal), I prefer other leisure activities (intrapersonal), too unfit (intrapersonal), too tired (intrapersonal), too much pain (intrapersonal) and too

unhealthy (intrapersonal). Eight facilitators were listed: I enjoy physical activity (intrapersonal), physical activity improves my well-being (intrapersonal), I am exercising together with a friend (interpersonal), great exercise facilities (organizational), competent and engaged physiotherapist (interpersonal), short distance to exercise facilities (organizational), free exercise (policy) and my partner supports me in exercising (interpersonal). All barriers and facilitators had seven response options on a Likert scale, ranging from strongly agree (1) to strongly disagree (7).

Self-perceived health had five response options on a Likert scale, ranging from very good (1) to very poor (5).

Quality of life was rated on a visual analogue scale from 0-100 (0 = no quality of life and 100 = highest degree of quality of life) (de Boer, 2004). Finally, the respondents were asked whether they had any known cardiovascular diseases, other comorbidities and what type of medication they took.

2.3 Data analysis

Data regarding physical activity level was merged into three groups: physical activity ≤ 1 time/week (low physical activity), 2-3 times/week (moderate physical activity) and ≥ 4 times/week (high physical activity). Data regarding the overall attitude to physical activity was divided into three groups: 'I do not care for physical activity' (including 'I do not know'), 'physical activity is ok' and 'I like physical activity'. Barriers and facilitators were divided into three levels: 'strongly agree and agree' (agree), 'partly agree', 'neither/nor' and 'partially disagree' (neutral), disagree and strongly disagree (disagree). A sum score (8-56) was calculated for the eight barriers, based on conversion of responses on the 7-point Likert scale to numbers 1-7. In the same way, a sum score (8-56) was calculated for the eight facilitators. The lower the number, the stronger the agreement.

Descriptive data is presented with median, and range or percentage. Comparisons between groups were analysed using non-parametric statistics. For ordinal data, a Kruskal-Wallis test (three or more groups), Dwass-Steel-Critchlow-Fligner (for pairwise comparisons) and for nominal data a chi-squared test was used. A crude and a multivariate logistic regression analysis (both controlled for sex and age) were performed with the dependent variable low (≤ 1 time/week) vs. high physical activity (≥ 4 times/week) and overall attitudes, barriers, facilitators, self-perceived health and quality of life as independent variables.

The statistical analyses were performed with the software programme the jamovi project (version 1.1.5.0, 2019), retrieved from <https://www.jamovi.org> and SPSS version 25 (IBM Corp., Armonk, NY, USA).

2.4 Ethical approval

In accordance with Danish legislation, surveys in which the participants are anonymous do not require formal approval by the Regional Scientific Ethics Committee. The members of the Danish Patient Association for Axial Spondyloarthritis were informed about the purpose of the survey in the invitation sent by e-mail. In replying to the survey via the inserted hyperlink, they gave their consent to participate.

3. RESULTS

Out of the 972 association members with axSpA who were invited, 445 (46%) responded to the questionnaire, median age 56 (range 22 – 85) years, and 241 (54%) were men (Table 1). Information about non-responders was not available.

3.1 Physical activity levels

In total, 23% of the responders were physically active for at least 30 minutes at a moderate intensity level once a week or less (the 'low physical activity group'), 36% two or three times a week (the 'moderate physical activity group'), and 41% at least four times a week (the 'high physical activity group'). Please see Table 2.

Among all responders, brisk walking was a commonly reported activity (reported by, respectively, 31%, 46% and 61% of the members in the low, moderate and high physical activity groups). Exercise supervised by a physiotherapist was reported by 19%, 33% and 35%, respectively. Those in the moderate and high physical activity groups commonly reported that they engaged in cycling or spinning (28% and 40%, respectively). Eighteen percent in the low physical activity group reported to be engaged in aquatic exercise, while 14% reported cycling as an activity performed during the past week.

3.2 Participants characteristics associated with engaging in physical activity

The only association found between participants' characteristics and engagement in physical activity was self-reported intake of pain medication (paracetamol). The participants who used paracetamol had a significant lower level of physical activity than non-consumers had ($p = 0,018$, chi-squared test).

3.3 Overall attitudes to physical activity

The largest proportion (68%) of the respondents who reported 'I do not like physical activity' (or 'I do not know') were in the low physical activity group. Participants reporting physical activity to be 'ok' were evenly distributed across all three groups, with 30% in the low, 42% in the moderate and 29% in the high physical activity group. Those who 'liked physical activity' were more frequently (53%) in the high physical activity group, compared to 13% in the low physical activity group ($p < 0.001$), please see Table 2.

3.4 Barriers and facilitators associated with engaging in physical activity

The most common barriers reported were 'too tired' and 'too much pain' (Figure 1). When examining the total score for barriers, the low physical activity group more strongly agreed with the barriers (median 32, range 10-54) compared with the other two groups (median 37, range 16-56 and median 44, range 23-56 respectively, $p < 0.001$), please see Table 2.

Facilitators of physical activity, highly agreed upon by all participants, were 'improved well-being' (65%), 'a competent and engaged physiotherapist' (61%), 'great exercise facilities' (61%) and 'short distance to exercise facilities' (59%). Please see Figure 1. In all three physical activity groups, at least one third of the respondents agreed with all suggested facilitators of physical activity. In the low physical activity group, 56% agreed with the statement: 'a competent and engaged physiotherapist is a facilitator of physical activity'. The low physical activity group had a higher total score, indicating less agreement with facilitators, compared with the high physical activity group, $p < 0.001$. Please see Table 2.

3.5 Level of physical activity and associated variables

In the crude model, controlled for age and gender, a high level of physical activity (dependent variable) was associated with a positive attitude, higher disagreement with barriers, higher agreement with facilitators, fair or good health and better quality of life. In the multivariate model, a higher level of physical activity was associated with a positive attitude ('physically activity is ok', OR 5.44, 95%CI [1.24 ; 23.87], and 'I like physical activity', OR 14.22, 95%CI [3.34 ; 60.61]), and a higher disagreement with barriers, OR 1.12, 95%CI [1.07 ; 1.17]), please see Table 3.

3.6 Self-perceived health and quality of life in different levels of physical activity

Self-perceived health and quality of life were rated higher by respondents in the moderate and high physical activity groups, compared with those in the low physical activity group ($p < 0.001$ and $p = 0.003$, respectively). However, self-perceived health and quality of life did not differ between the moderate and high physical activity groups ($p = 0.241$ and $p = 0.940$), please see Table 2.

4. DISCUSSION

The present survey indicated that level of physical activity was strongly associated with overall attitudes towards physical activity and perceptions of barriers to physical activity in people with SpA, while associations with facilitators, self-perceived health and quality of life were weaker. To support changes in physical activity level in people with axSpA, these findings emphasize the importance of getting a deeper knowledge of patients' thoughts and feelings related to actions affecting their exercise behaviour.

Our results showed that overall attitudes, barriers and facilitators had an impact on performed physical activity level, supporting the decision to integrate the Reasoned Action Theory and the Ecological Model in our study (Ajzen and Fishbein, 1980; Sallis et al., 2008). Addressing behavior as multifactorial by including intrapersonal, interpersonal, organizational and policy aspects in the addressed barriers and facilitators, as stated by the Ecological model (Sallis et al., 2008), may provide a wider perspective. We found that a higher level of physical activity was associated with a higher disagreement with barriers but not with a higher agreement with facilitators in the multivariate model. All suggested barriers belonged to the intrapersonal domain, and we propose that these barriers seem to be of greater significance for their level of physical activity than facilitators of any kind. This is in agreement with a recent review studying physical activity in the elderly, where the authors concluded that facilitators of and barriers to physical activity are more closely related to intrapersonal factors than to interpersonal and environmental factors (Yarmohammadi et al., 2019). Contrary to this, an Australian population study with 2,194 adults found that the level and likelihood of participation in physical activity was strongly associated with various types of perceived barriers, but also with perceived benefits, social support and environmental factors (Cerin et al., 2010). In our study, only the proposed facilitators and not the proposed

barriers included a mix of intrapersonal, interpersonal, organizational and policy aspects. An association between high level of physical activity and a higher agreement with facilitators was found in the crude model, supporting the importance of the ecological model and the study on the general population by Cerin et al. (Cerin et al., 2010). The lower number of participants and a population with a chronic disease in our study may affect the statistical significance of facilitators as an independent factor in the multivariate model. In summary, the use of a comprehensive framework to understand the complexity of adhering to physical activity recommendations by proposing that determinants at all levels (individual, social, environmental, and policies) contribute, may facilitate health professionals' clinical work to support lifestyle changes (Baumann et al., 2012).

Fatigue and pain were barriers to physical activity commonly reported by all participants, and this is in line with previous studies (Sundström et al., 2002; Brophy et al., 2013; Fongen et al., 2015). In our study, participants who used pain medication (paracetamol) had a significant lower level of physical activity than non-consumers had. Pain is often a fluctuating symptom in people with axSpA, which is why exercise and physical activity may need to be modified during periods of high pain intensity. Although fatigue can be persistent and difficult to treat (Bedaiwi et al., 2015), a combination of cardiorespiratory and muscular strength exercises of moderate to high intensity may reduce fatigue (Sveaas et al., 2019; Masiero et al., 2011). There are, however, conflicting reports on the association between fatigue and exercise, indicating the importance of a person-centred perspective. A smaller study including 61 patients with AS found that half of the patients reported an improvement in fatigue by taking exercise, while the other half reported that their fatigue worsened after exercise (Passalent et al., 2010). Similar findings were found in a qualitative study encompassing patients with AS performing regular physical activity, where a reduction in fatigue was experienced by some participants, while others reported no effect on fatigue (O'Dwyer et al., 2016).

Self-perceived health and quality of life were higher in the groups with moderate and high levels of physical activity compared to the group with low level of physical activity. These findings are supported by earlier studies in people with chronic inflammatory arthritis (Eurenius et al., 2005, Haglund et al., 2012, Rohde et al., 2017). In the general population, there is a positive relationship between physical activity and self-perceived health, with a stronger dose-response relationship for self-reported physical activity compared to objectively measured physical activity (Kaleta et al., 2006, Niemelä et al., 2019).

Participants' physical activity level was self-reported and there is a tendency for participants to over-rate their level of physical activity in surveys (Dyrstad et al., 2014; Colley et al., 2018). The difference between self-reported and accelerometer-measured physical activity tends to increase with higher activity and intensity levels (Dyrstad et al., 2014). Contrary to this, Colley et al. found that the 20% least active were more likely to overestimate reports of physical activity compared with accelerometer data, compared to the 20% in the most active group (Colley et al., 2018). In our study, 77% were physically active 2 days or more per week, and 41% were physically active 4 days or more per week. Numbers from previous studies vary greatly, according to a recently published systematic review, where 15-70% were physically active 2 days or more per week, and 24-57% 3 days or more per week (Liu et al., 2019). In a study with 2,167 people with spondyloarthritis (571 with AS), 57% were physically active for 5 days or more per week (Haglund et al., 2012). Thus, on taking the wide range and different methodologies into consideration, our results are in line with previous studies.

Findings from the current study can be of use in everyday clinical practice to support changes in physical activity habits. To increase the level of physical activity in people with axSpA, it is necessary to explore people's attitudes to physical activity and intrapersonal barriers. Attitudes and barriers can be modifiable, but simply giving patients advice to change is often unrewarding and ineffective for behavioral change (Rollnick et al., 2010). It is important that health professionals listen, assess and discuss the impact of barriers and attitudes to physical activity with their clients, and that shared decisions are made (Elwyn et al., 2012). Motivational interviewing techniques can be particularly useful to help people identify and overcome barriers towards physical activity (Rollnick et al., 2010). Individually tailored behaviour change techniques that incorporate motivational interviewing, partnership and cooperation between physiotherapist and participants can improve and support the maintenance of health-enhancing physical activity in people with AS (O'Dwyer et al., 2016).

The study has some limitations. The participants were members of a patient association, which may limit generalization to the larger population of patients with axSpA. The diagnosis was self-reported, but the participants are likely to have become members of the Danish Patient Association for Axial Spondyloarthritis after a physician confirmed diagnosis within the spectrum of axSpA, and 90% reported that they had AS. With a male to female ratio of 2:1 in axSpA, women are over-represented (46% women), but we found no difference in the level of physical activity between men and women.

The use of the reasoned action theory in combination with the Ecological model might be questioned. However, our findings were supported by the two chosen theories in line with earlier research (Rhodes et al., 2009; McEachan et al, 2016). Other theories, such as self-efficacy could be relevant to understand exercise behavior in people with chronic diseases (Daniali et al, 2017). In this study we did not measure self-efficacy but in future studies in people with axSpA and exercise behavior, self-efficacy theory may lead to further knowledge.

A strength of the present study is the large number of people with axSpA who responded to the survey, and that the participants represent all regions in Denmark.

5. CONCLUSION

Level of physical activity was strongly associated with overall attitudes towards physical activity and the perceptions of barriers to physical activity. The association between level of physical activity and facilitators, self-perceived health and quality of life was less pronounced. We also found that intrapersonal barriers seemed to be of greater significance for physical activity level than facilitators of any kind. To support changes in physical activity level in people with axSpA, health professionals need to explore and discuss attitudes and barriers to physical activity with their clients.

CONFLICTS OF INTEREST

The authors report that there are no conflicts of interest.

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TABLE 1. Characteristics of patients with axSpA who responded to the questionnaire

	All N = 445	Men N=241 (54%)	Women N=204 (46%)
Age, years , median (range)	56 (22-85)	62 (22-85)	52 (22-77)
Married/cohabiting n (%)	325 (73.0)	181 (75.1)	144 (70.6)
Employed n (%)	254 (57.1)	116 (48.1)	138 (67.6)
Ever smokers n (%)	231 (51.9)	136 (56.4)	95 (46.6)
Cardiovascular disease n (%)	114 (25.6)	77 (32.0)	37 (18.1)
Other comorbidities n (%)	311 (70.0)	164 (68.0)	147 (72.1)
Any medication n (%)	395 (88.8)	212 (88.0)	183 (89.7)
NSAIDs n (%)	101 (22.7)	55 (22.0)	48 (23.5)
TNF-inhibitor therapy n (%)	173 (38.9)	91 (37.8)	82 (40.2)
Paracetamol n (%)	179 (40.2)	89 (36.9)	90 (44.1)
Opioids n (%)	64 (14.4)	19 (07.9)	45 (22.1)

Key: NSAID=Non-steroidal anti-inflammatory drug

TABLE 2. Self-reported health information stratified into three groups based on physical activity level

	All N = 445	physical activity ≤ 1 time/week N = 101	physical activity 2-3 times/week N = 162	physical activity ≥4 times/week N = 182	P
Age , median (range)	56 (22-85)	53 (22-85)	56 (28-84)	59 (24-84)	0.068
Gender: Men n (%)	241 (54.2)	56 (23.2)	87 (36.1)	98 (40.7)	0.957
Women n (%)	204 (45.8)	45 (22.1)	75 (36.8)	84 (41.2)	
Self-perceived health:					<0.001 ^{*1,3}
Poor n (%)	112 (25.2)	46 (41.1)	35 (31.3)	31 (27.7)	
Fair n (%)	196 (44.0)	34 (17.3)	79 (40.3)	83 (42.3)	
Good n (%)	137 (30.8)	21 (15.3)	48 (35.0)	68 (49.6)	
Quality of life (0-100mm), median (range) n (%)	71 (0-100)	59 (0-100)	72 (7-100)	75 (0-100)	0.003 ^{*1,3}
Overall attitude to physical activity n (%):					<0.001 ^{*1,2,3}
I do not like/do not know	34 (07.6)	23 (67.6)	8 (23.5)	3 (08.8)	
It is OK	154 (34.6)	46 (29.9)	64 (41.6)	44 (28.6)	
I like physical activity	257 (57.8)	32 (12.5)	90 (35.0)	135 (52.5)	
Sum score [8-56]					<0.001 ^{*1,2,3}
Barriers, median (range)	38 (10-56)	32 (10-54)	37 (16-56)	44 (23-56)	
Facilitators, median (range)	23 (08-48)	24 (10-48)	23 (10-46)	21.5 (08-43)	0.001 ^{*3}

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Key: *1: ≤ 1 time/week vs 2-3 times/week, *2: 2-3 times/week vs ≥ 4 times/week,
*3: ≤ 1 time/week vs ≥ 4 times/week.

TABLE 3. Results from logistic regression analysis with low vs. high level of physical activity as dependent variable (n = 283)

Variables	CRUDE ANALYSIS		MULTIVARIATE ANALYSIS [†]	
	OR (95% CI)	p-value	OR (95% CI)	p-value
Gender				
Men	1.0		1.0	
Women	0.80 (0.58 ; 1.53)	0.420	0.79 (0.41 ; 1.55)	0.501
Age	1.02 (1.00 ; 1.04)	0.028	1.02 (0.99 ; 1.05)	0.099
Overall attitude to PA:				
I do not like/do not know	1.0		1.0	
It is OK	7.33 (2.06 ; 26.17)	0.002	5.44 (1.24 ; 23.87)	0.025
I like physical activity	32.34 (9.14 ; 114.41)	<0.001	14.22 (3.34 ; 60.61)	<0.001
Sum barriers (8-56)	1.16 (1.12 ; 1,21)	<0.001	1.12 (1.07 ; 1.17)	<0.001
Sum facilitators (8-56)	0,94 (0,91 ; 0.97)	<0.001	0.97 (0.93 ; 1.02)	0.207
Self-perceived health:				
Poor	1.0		1.0	
Fair	3.62 (1.98 ; 6.64)	<0.001	2.00 (0.84 ; 4.53)	0.118
Good	4.81 (2.46 ; 9.38)	<0.001	1.62 (0.59 ; 4.45)	0.346
Quality of Life (0-100)	1.02 (1.01 ; 1.03)	<0.001	1.00 (0.99 ; 1.02)	0.897

Key: PA: physical activity, [†]R²: Nagelkerke R Square 0,47

OR: Odds ratio. All analyses were adjusted for age and sex. 95% CI = 95% confidence interval