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HEALTH-PROMOTING BEHAVIORS OF WOMEN AND THEIR OPINIONS ON THE QUALITY OF FITNESS SERVICES, DEPENDING ON EXPERIENCED MUSCULOSKELETAL INJURIES

Ewa Puszczałowska-Lizis[1(A,B,C,D,E,F)], Sabina Lizis[1(C,D,E,F)], Paula Głód[2(A,B,D)], Ewa Kitschke[3(D,F)]

[1]Institute of Physiotherapy, Faculty of Health Sciences and Psychology, Collegium Medicum, University of Rzeszów, Poland
[2]"Fitness Body", Krosno, Poland
[3]Department of Rehabilitation, Faculty of Health Sciences, Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University in Toruń, Poland

Authors' contribution
A. Study design/planning
B. Data collection/entry
C. Data analysis/statistics
D. Data interpretation
E. Preparation of manuscript
F. Literature analysis/search
G. Funds collection

Summary

Background. The increasing awareness of modern societies about the adverse consequences of a sedentary lifestyle has an impact on the growing interest in physical recreation. The study aimed at health-promoting behaviors of women and their opinions on the fitness services quality, depending on experienced musculoskeletal injuries.

Material and methods. Research using the diagnostic survey method included 100 women aged 35-55, clients of the "EUROGYM" fitness club in Krosno, Poland. Research tool was a self-made questionnaire, which covered 3 thematic sections. The Mann-Whitney U test and the Pearson Chi-square test were used to analyze the results.

Results. Declarations about medical consultation before deciding to use fitness club offer depended on the group (p=0.044). The majority of women, regardless of group, did not use wellness (p=0.086). Most respondents, regardless of group, considered the instructor's competence to be high (p=0.080).

Conclusions. There is a need to implement programs that popularize the need to consult one's health with a doctor before participating in fitness activities. In addition, it is necessary to popularize the importance of wellness for tissue regeneration and leveling the effects of fatigue on the body.

Keywords: fitness services quality, musculoskeletal injuries, health-promoting behaviors, physical condition, women

Introduction

The increasing awareness of modern societies about the adverse consequences of a sedentary lifestyle has an impact on the growing interest in physical recreation and active leisure activities. The development of civilization makes it possible to increase the number of facilities offering the opportunity to practice various forms of physical activity. Particularly dynamic development concerns fitness clubs, which, due to the comprehensiveness of their services and the attractiveness of their equipment, as well as their interesting range of activities and easy accessibility, gather a large number of people of different ages [1,2].

According to Osiński [3], physical recreation, as a popular way of spending leisure time, is being referred to as a phenomenon of the 21st century. Nowak [4] stressed that the idea of motor recreation implies that any competition should be of a playful

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Address for correspondence: Ewa Puszczałowska-Lizis, Institute of Physiotherapy, Faculty of Health Sciences and Psychology, Collegium Medicum, University of Rzeszów, Rejtana 16c, 35-959 Rzeszów, Poland, e-mail: ewalizis@poczta.onet.pl, phone: +48 17 872 10 00

ORCID: Ewa Puszczałowska-Lizis https://orcid.org/0000-0003-3737-0622, Sabina Lizis https://orcid.org/0009-0009-2402-8757, Paula Głód https://orcid.org/0009-0008-6884-1742, Ewa Kitschke https://orcid.org/0000-0003-4963-658X

nature and should be far from the negative effects that occur in competitive sports. Sports of a recreational nature should operate on the basis of flexible rules described in advance, which are designed to increase a person›s fitness so that its level is sufficient to function properly in everyday life. Despite the fact that the assumptions of recreational sports are associated with health-promoting benefits, it should be emphasized that physical activity undertaken improperly can have just as dangerous consequences as competitive sports. Therefore, according to Pałka [5], with the increase in interest in active leisure activities, there has been an increase in injuries, in most cases caused by participants starting training without first exploring the theory of the forms of movement undertaken. Bennie et al. [6], Kemler et al. [7], and Noteboom et al. [8] pointed out that a common mistake is overtraining, which is associated with exaggerated ambition on the part of the participant or an instructor who shows a lack of competence. Serious injuries can also be caused by improper selection of exercises and training loads, as well as inadequate warm-up or lack of it. According to Wu et al. [9] and Bergmeister et al. [10], fitness-related musculoskeletal injury can be broadly broken down into three categories: muscle injury, tendon injury, and nerve injury. Reihel et al. [11], Ristolainen et al. [12] and Zhan [13] described acute injuries that occur, for example, during a sudden twist of the knee, which predisposes to ligament damage. The stimulus is strong and acts locally on the affected part of the musculoskeletal apparatus. Chronic injuries, on the other hand, are the result of cumulative micro-injuries. They are often underestimated because they do not result in the same severe pain sensations as acute ones. If left untreated, they often leave a permanent mark.

Aim of the work

A review of the literature indicates that women's fitness motivation is the internal driving force for women to stimulate and maintain fitness and make action-oriented fitness. The top three reasons why mature women participate in sports are to strengthen their health, relieve stress, and to prevent diseases. Various forms of physical recreation are now common, but despite this, there is still little knowledge about the dangers and injuries associated with amateur sports [5,8,14]. This became the reason for taking up the topic of this work, the aim of which was health-promoting behaviors and opinions on the quality of fitness services in women who have and have not experienced fitness-related musculoskeletal injuries.

Material and methods

Participants

This cross-sectional study recruited 100 women aged 35 to 55 ($\overline{x}$ =41.35±4.53 years), systematically participating in organized physical activities (TBC, Total Body Condition) at the "EUROGYM" fitness club in Krosno, Podkarpackie Voivodeship, Poland.

Taking into account the fact of suffering a fitness-related musculoskeletal injury, the subjects were divided into 2 groups:

- group I – women who have experienced fitness-related musculoskeletal injury,
- group II – women who have not experienced fitness-related musculoskeletal injury.

For the group I, inclusion criteria were: female sex, 35-55 years age range; regular participation in TBC activities during the past year; occurrence of a musculoskeletal injury sustained due to fitness during the past year before the study. Fitness-related injuries were defined as "any physical complaint sustained by an athlete that occurred during or as a result of a fitness training and caused the athlete to stop the fitness training and/or prevent them from participating in the next fitness training". This included both gradually sustained injuries, and injuries with a sudden onset, as defined by the International Olympic Committee [15].

The inclusion criteria for group II were as follows: female sex, 35-55 years age range; regular participation in TBC activities during the past year.

Based on the above criterion, 40 women were qualified to group I, and group II consisted of 60 women.

Women who completed the survey illegibly or incompletely and those who did not give written consent to the research were excluded from the study.

Table 1 presents sociodemographic and clinical characteristics of the respondents. These data indicate that the greatest number of women from group I declared higher education, while in group II there were most women with secondary or vocational education (p=0.018). Women from group I had higher average body weight values than women from group II (p=0.013). Body build was dependent on the group. Women from group I had normal weight, while most women from group II were obese (p<0.001).

Table 1. Characteristics of study population

Variable	Group I (have experienced injury) n=40	Group II (have not experienced injury) n=60	Statistics
Age [years], $\bar{x}$ ±SD (Me)	41.65±4.72 (41.00)	41.15±4.43 (40.00)	Z=0.51 p=0.605
Level of education, n (%)			
Secondary/vocational	5 (12.0)	20 (33.0)	$\chi^2(1)$=5.56 p=0.018*
Higher	35 (88.0)	40 (67.0)	
Type of professional work, n (%)			
White-collar work	30 (75.0)	46 (76.0)	$\chi^2(2)$=2.31 p=0.315
Blue-collar work	8 (20.0)	7 (12.0)	
Does not work	2 (5.0)	7 (12.0)	
Body mass [kg], $\bar{x}$ ±SD (Me)	67.88±10.44 (64.0)	62.03±8.53 (62.0)	Z=2.46 p=0.013*
Body height [cm], $\bar{x}$ ±SD (Me)	165.50±6.03 (165.0)	164.23±6.36 (164.0)	Z=1.04 p=0.294
BMI, $\bar{x}$ ±SD (Me)	24.78±3.60 (23.19)	22.94±2.49 (23.13)	Z=1.91 p=0.055
Body build, n (%)			
Underweight	0 (0.0)	2 (3.0)	$\chi^2(3)$=22.32 p<0.001*
Normal weight	24 (60.0)	65 (92.0)	
Overweight	14 (35.0)	1 (2.0)	
Obesity	2 (5.0)	2 (3.0)	
Type of fitness-related musculoskeletal injury, n (%)			
Muscle injury	6 (15.0)	-	-
Tendon injury	18 (45.0)	-	
Nerve injury (i.e. carpal tunnel syndrome, tendonitis, thoracic outlet syndrome, back pain)	16 (40.0)	-	

Variable	Group I (have experienced injury) n=40	Group II (have not experienced injury) n=60	Statistics
Part of the body affected by the fitness-related musculoskeletal injury, n (%)			
Shoulder	2 (5.0)	-	-
Thigh	1 (2.0)	-	
Calf	3 (7.0)	-	
Arm or elbow	2 (5.0)	-	
Hip or pelvis	1 (2.0)	-	
Knee	7 (17.0)	-	
Ankle	6 (15.0)	-	
Foot	2 (5.0)	-	
Neck or cervical spine	5 (12.0)	-	
Back or thoracolumbar spine	6 (15.0)	-	
Forearm	2 (5.0)	-	
Hand	1 (2.0)	-	
Wrist	2 (5.0)	-	
Other	0 (0.0)	-	
Treatment required for fitness-related musculoskeletal injury, n (%)			
Conservative treatment	40 (100.0)	-	-
Surgical treatment	0 (0.0)	-	

Notes: n – number of subjects; % – percent of subjects; χ^2 – value of the Chi-square test statistic; $\overline{x}$ – arithmetic mean value; SD – standard deviation; Z – value of the Mann Whitney U test statistic; p – probability value; *p<0.05.

Protocol

The research was carried out with the aid of a diagnostic survey. A self-made questionnaire was used that contained 24 questions and covered 3 thematic sections. Section 1 contained 6 questions focused on the characteristics of the study population (about age, educational level, type of professional work, type fitness-related musculoskeletal injury, part of the body affected by the fitness-related musculoskeletal injury, treatment required for fitness-related musculoskeletal injury). Section 2 contained 9 questions focused on the respondents' declarations on health issues (about medical consultation before deciding to use a fitness club's offer, weekly and daily frequency of participation in fitness classes, attention to selection of right clothing for fitness activities, taking care to select the right footwear for fitness activities, using wellness treatments, preferences for wellness treatments, taking care of the proper diet, sources of knowledge on proper nutrition). Section 3 contained 9 questions focused on the respondents' opinions on the quality of services provided by the fitness club (about adjusting the room for fitness activities, the group size during fitness classes, the ratio of room space to the number of class participants, the evaluation of the instructor competence, warm-up before the main part of the class, the level of difficulty of exercises and nature of loads in relation to participants' abilities, and the quality of the fitness instructor's work).

The survey included 21 closed questions (with a ready set of answers), 2 multiple choice questions (with multiple answer options) and 1 open-ended question (that required the respondent to provide answer).

The authors distributed the questionnaires among the respondents before fitness classes. All the respondents were given specific instructions on how to fill in the questionnaires, and returned them as soon as they had responded to all the questions. The purpose of face-to-face distribution was to ensuring high quality of the survey.

Statistical analysis

The compliance of the data with normal distribution was verified using the Shapiro-Wilk test. The Mann-Whitney U test was used to assess differences in the average level of a numerical feature in two populations, and the dependences between qualitative data were analyzed using the Pearson Chi-square test. The level of statistical significance was assumed to be $p<0.05$. The statistical analysis was performed in Statistica 13.1 by StatSoft.

Results

The data in Table 2 show statistically significant dependences of declarations about medical consultation before deciding to use a fitness club's offer with group membership ($p=0.044$). A higher percentage of women in group I consulted a doctor about their own health.

Table 2. Respondents' declarations on health issues

Declaration	Group I (have experienced injury)	Group II (have not experienced injury)	Chi-square test
Medical consultation before deciding to use a fitness club's offer, n (%)			
Yes	8 (20.0)	4 (7.0)	$\chi^2(1)=4.04$ $p=0.044$*
No	32 (80.0)	56 (93.0)	
Weekly frequency of participation in fitness classes, n (%)			
1-2 times a week	25 (62.0)	24 (40.0)	$\chi^2(3)=6.61$ $p=0.085$
3-4 times a week	10 (25.0)	30 (50.0)	
5-6 times a week	4 (10.0)	4 (7.0)	
Other	1 (3.0)	2 (3.0)	
Daily frequency of participation in fitness classes, n (%)			
1 class per day	34 (85.0)	54 (90.0)	$\chi^2(1)=0.56$ $p=0.451$
More than 1 class per day	6 (15.0)	6 (10.0)	
Attention to selection of right clothing for fitness activities, n (%)			
Yes	37 (93.0)	57 (95.0)	$\chi^2(1)=0.26$ $p=0.606$
No	3 (7.0)	3 (5.0)	
Taking care to select the right footwear for fitness activities, n (%)			
Yes	35 (87.0)	58 (97.0)	$\chi^2(1)=3.09$ $p=0.078$
No	5 (13.0)	2 (3.0)	
Using wellness treatments, n (%)			
Yes	10 (25.0)	25 (42.0)	$\chi^2(1)=2.93$ $p=0.086$
No	30 (75.0)	35 (58.0)	
Preferences for wellness treatments, n (%)			
Sauna	10 (25.0)	18 (30.0)	$\chi^2(1)=0.29$ $p=0.585$
Massage	6 (15.0)	23 (39.0)	$\chi^2(1)=6.62$ $p=0.010$*
Cryotherapy	2 (5.0)	6 (10.0)	$\chi^2(1)=0.82$ $p=0.366$
Hydrotherapy	4 (10.0)	0 (0.0)	$\chi^2(1)=6.25$ $p=0.012$*

Declaration	Group I (have experienced injury)	Group II (have not experienced injury)	Chi-square test
Other	2 (5.0)	2 (3.0)	$\chi^2(1)=0.17$ $p=0.676$
Taking care of the proper diet, n (%)			
Yes, following a strict diet	10 (25.0)	12 (20.0)	$\chi^2(2)=0.58$ $p=0.746$
Sometimes eating healthily	28 (70.0)	46 (77.0)	
Not paying attention to the diet	2 (5.0)	2 (3.0)	
Sources of knowledge on proper nutrition, n (%)			
Radio, television	13 (32.0)	29 (48.0)	$\chi^2(1)=2.46$ $p=0.116$
Magazines	12 (30.0)	25 (42.0)	$\chi^2(1)=1.40$ $p=0.236$
Books and scientific articles	17 (42.0)	18 (30.0)	$\chi^2(1)=1.64$ $p=0.199$
Fitness instructor or personal trainer	2 (5.0)	10 (17.0)	$\chi^2(1)=3.09$ $p=0.078$
Dietician	9 (22.0)	15 (25.0)	$\chi^2(1)=0.08$ $p=0.774$
Other	6 (15.0)	4 (7.0)	$\chi^2(1)=1.85$ $p=0.173$

Notes: n – number of subjects; % – percent of subjects; χ^2 – value of the Chi-square test statistic; p – probability value; *$p<0.05$.

Most women, regardless of group affiliation, participated in classes 1-2 times a week or 3-4 times a week ($p=0.085$), and one time per day ($p=0.451$). As many as 93% women in group I and 95% respondents in group II paid attention to the selection of clothing appropriate to the nature of the physical activity performed, while attention to proper footwear was demonstrated by 87% of women in group I and 97% of women in group II. There were no statistically significant correlations of these behaviors with group membership ($p=0.606$; $p=0.078$).

Declarations regarding the use of wellness were given by 25% women from group I and 42% women from group II. The frequency of these declarations did not depend on group membership ($p=0.086$). Most women (25% of the respondents from group I and 30% of the respondents from group II), regardless of group, attended saunas. Statistically significant dependences were found between group membership and the frequency of use of massage ($p=0.010$) and hydrotherapy ($p=0.012$). Massage was more frequently attended by women from group II, while hydrotherapy was more frequently attended by women from group I. Among other forms of wellness, the female respondents declared steam baths and water jets.

Most of the female respondents, regardless of group, declared that sometimes they try to eat healthily (p=0.746). The majority, regardless of group membership, obtained information on healthy eating from radio and television, magazines, as well as from books and scientific articles. As other sources of information, the female respondents cited the Internet and friends.

The data in Table 3 shows that the majority of the female respondents, regardless of group ($p=0.345$), felt that the gym was suitable for fitness activities. Women, regardless of the group ($p=0.066$) mostly mentioned that 15-20 people attend the classes. There was a statistically significant dependence of opinions regarding the ratio of the room space to the number of participants, by group ($p=0.010$). The majority of women in group I considered

the room optimal, while the opinion of most women in group II was that the room was too small. The vast majority of the female respondents, regardless of the group, considered the instructor's competence to be high (p=0.080), declaring that the instructor always conducts a warm-up before the main part of the class (p=0.080), adjusts the difficulty level of the exercises and the nature of the loads to the participants' abilities (p=0.169), corrects the participants' mistakes (p=0.151), explains the technique of new exercises (p=1.000). Women from group II more often answered that the instructor applies stretching at the end of the training unit (p=0.008).

Table 3. Respondents' opinions on the quality of services provided by the fitness club

Opinion	Group I (have experienced injury)	Group II (have not experienced injury)	Chi-square test
Adjusting the room for fitness activities, n (%)			
Customized	28 (70.0)	47 (78.0)	$\chi^2(1)=8.89$
Not adapted	12 (30.0)	13 (22.0)	$p=0.345$
Group size during fitness classes, n (%)			
Less than 10 people	10 (25.0)	6 (10.0)	$\chi^2(4)=8.80$
10-15 people	13 (32.0)	21 (35.0)	$p=0.066$
15-20 people	15 (37.0)	31 (52.0)	
20-30 people	2 (6.0)	0 (0.0)	
Other	0 (0.0)	2 (3.0)	
Ratio of the room space to the number of class participants, n (%)			
Optimal	27 (67.0)	29 (48.0)	$\chi^2(2)=7.91$
Too large	2 (5.0)	0 (0.0)	$p=0.019$*
Too small	11 (28.0)	31 (52.0)	
Evaluation of the instructor's competence, n (%)			
High	38 (95.0)	60 (100.0)	$\chi^2(1)=3.06$;
Low	2 (5.0)	0 (0.0)	$p=0.080$
Warm-up before the main part of the class, n (%)			
Yes, every time	38 (95.0)	60 (100.0)	$\chi^2(1)=3.06$
Yes, sometimes	0 (0.0)	0 (0.0)	$p=0.080$
No	2 (5.0)	0 (0.0)	
Level of difficulty of exercises and nature of loads in relation to the participants' abilities, n (%)			
Appropriate	36 (90.0)	58 (97.0)	$\chi^2(1)=1.89$
Inappropriate	4 (10.0)	2 (3.0)	$p=0.169$
Instructor corrects the participants' mistakes, n (%)			
Yes	40 (100.0)	57 (95.0)	$\chi^2(1)=2.06$
No	0 (0.0)	3 (5.0)	$p=0.151$
Instructor explains the technique of new exercises, n (%)			
Yes	40 (100.0)	60 (100.0)	$\chi^2(1)=0.00$
No	0 (0.0)	0 (0.0)	$p=1.000$

Opinion	Group I (have experienced injury)	Group II (have not experienced injury)	Chi-square test
Instructor applies stretching at the end of the training unit, n (%)			
Yes, every time	34 (85.0)	60 (100.0)	$\chi^2(2)=9.57$ $p=0.008$*
Yes, sometimes	2 (5.0)	0 (0.0)	
Yes, but the exercises are not conducted correctly	0 (0.0)	0 (0.0)	
No	4 (10.0)	0 (0.0)	

Notes: n – number of subjects; % – percent of subjects; χ^2 – value of the Chi-square test statistic; p – probability value; *$p<0.05$.

Discussion

Our study demonstrated that a small number of women consulted their own health with a doctor before participating in fitness classes. It is puzzling that women who had not suffered an injury in the past declared such consultations more often than women with a history of injury. The data are disturbing, because, according to Sikora and Celmer [16], a negative aspect of recreation in fitness clubs is that it is mass in nature. Owners of fitness centers strive for as many clubbers as possible, while ignoring their individual needs and health predispositions. As a result, this leads to unconscious selection of activities by clients, most often not advisable given their current state of health, and downplaying contraindications to a given physical activity leads to injuries. Therefore, the authors pointed out the importance of medical examinations and the need for consultation before engaging in regular physical activity. In turn, Grygorowicz et al. [17] recommended the advice of a physiotherapist, who should take a history and perform a physical examination, including an assessment of joint ranges of motion, muscle strength and clinical tests. According to the authors, such management will make it possible to detect possible functional abnormalities, which may pose a risk of overload and cause abnormal joint function even during minor physical efforts.

In our study, most women, regardless of a history of trauma, participated in activities 1-2 times a week or 3-4 times a week, once a day. This frequency of activity participation seems to be sufficient. Indeed, Olex-Mierzejewska [18] reported that in order to maintain physical fitness at an appropriate level, one should train 3 times a week for 30 minutes each or twice a week for 45 minutes. On the other hand, to improve fitness and figure, the author recommends fitness 3 times a week for 45-60 minutes each, increasing the number of workouts to 4-5 per week after an adaptation period. At the same time, she points out that it is particularly unfavorable to increase the frequency of classes abruptly, mainly due to the possibility of overtraining and other adverse effects, such as constant fatigue, lethargy, aversion to exercise, increased susceptibility to injury.

Most women, regardless of the group, paid attention to the choice of clothing and footwear. The importance of the proper selection of clothing for exercise, especially from the point of view of reducing the risk of injury was emphasized by Özdinç et al. [19]. According to the authors, clothing should be airy and not restrictive of movement, and the overriding part of the closet is footwear, which should, on the one hand, absorb shocks during exercise, especially the more dynamic ones, and, on the other hand, prevent slipping on the surface of fitness rooms.

Most of the female respondents, regardless of group, declared that sometimes they try to eat healthily. This is not satisfactory, especially since a number of authors, including Koehler and Drenowatz [20], Kårlund et al. [21], Rebollo-Ramos et al. [22], Bizzozero-Peroni et al. [23] pointed out the importance of a well-balanced diet to provide the right number of calories and nutrients in the form of proteins, carbohydrates and fats, and to prevent vitamin deficiencies, so as to avoid the risk of injury. Gruszczyńska et al. [24] stressed that technological

advances are making it easier to access dietary knowledge. Many people get their information from the Internet and television, as well as from social campaigns. The authors point out the need to select information from the media, which, as data show, encourage behaviors far from health-promoting, such as starvation. In this regard, it is necessary to appreciate the declarations of the respondents in our study, who most often drew their knowledge of proper nutrition not only from radio, television and magazines, but also from books and scientific articles.

Our study indicated that wellness treatments were not popular among women attending fitness classes, although those who had suffered an injury in the past were more likely to choose hydrotherapy, and those who had not experienced an injury were more likely to choose massage. The obtained data indicate the need to popularize wellness, especially since, in the opinion of many authors, it should be an integral part of training, and its use in helps prevent diseases resulting from overuse of the body and reduce the risk of injury [25]. According to Bezuglov et al. [26], it is both an element of prevention, as well as a means of combating the effects of injuries that have already occurred, especially in terms of regeneration of the body burdened by training.

The majority of the female respondents, regardless of the group, felt that the room was adequately suited for fitness classes, with 15-20 people participating in activities. Women who experienced trauma mostly rated the room in terms of the ratio of its surface area to the number of participants as optimal, while in the opinion of the majority of those who did not experience trauma, the room was too small. Gray and Finch [27] stressed that among the factors that should be taken into account when carrying out group activities in a safe manner, especially from the point of view of injury prevention, are the surface area, as well as type of surface and equipment of the rooms designed for activities. Equally important are the condition of the sports facility, sports equipment, training methods, proper warm-up and breaks between exercises.

The competence of fitness instructors is an interesting issue. By definition, they should be people specialized in training, including knowledge of anatomy, biomechanics of the human musculoskeletal system, as well as the ability of people with specific conditions or postural defects to perform exercises. Their task is to watch over the safety of the participants in the classes by selecting the right exercises, training loads and correcting the way they are performed, as well as adjusting the training to the needs of the paricipants. In our study, the vast majority of the female respondents, regardless of the group, considered the instructor›s competence to be high, and declared that the instructor always conducts a warm-up before the main part of the class, adjusts the difficulty level of the exercises and the nature of the loads to the capabilities of the participants, corrects the participants' mistakes, explains the technique of new exercises and applies stretching at the end of the training unit. Osiński [3] expressed the opinion that an instructor should present a high level of technical training and physical fitness in order to clearly convey his own knowledge and skills. In turn, Ahmed et al. [28] expressed concern that despite the growing popularity of services such as personal training or group fitness classes, as well as the increasing number of people with trainer›s licenses, the profession is still not fully regulated. The authors found that instructors enjoy a steadily growing authority, despite doubts about their competence. It is worrisome that most people who use the services of instructors, expect them to have an impeccable physique and mixed personality traits, without paying attention to the level of knowledge and skills.

Summarizing the results of our research, it can be concluded that the surveyed women are aware of their own needs, and positive statements about the quality of fitness services suggest that the club›s offer is tailored to their expectations. It is necessary to point out the necessity of implementing programs to popularize the need to consult the state of one›s own health with a doctor before participating in fitness activities. In addition, it is necessary to popularize the importance of wellness for tissue regeneration and leveling the effects of fatigue on the body. Doing so will reduce the risk of injuries resulting from musculoskeletal overload during fitness activities. In addition, a large-scale, longitudinal population-based study should be undertaken in the future to analyze in detail the causal relationships regarding health-seeking behavior and the quality of services provided

by fitness clubs. This will allow the development of strategies for the prevention of physical activity-related injuries, which should be tailored to the type of fitness activity undertaken.

Strengths and weaknesses of the study

The issues raised in this work should be considered as valuable. That it is among the first studies into injuries of the fitness population. As our study population was homogenous in terms of age and sex, our research findings might matter for their peers worldwide and therefore hold an appreciable application potential in overall prevention policies and in activities aimed at improving the quality of fitness services. The presented results are a source of practical implications for the scientists, coaches and participants. This will allow the development of strategies for the prevention of physical activity-related injuries. The authors believe that in that sense their findings may offer a certain application potential in rethinking public health policies, as presently in place.

The allocation of subjects to the study, pursued in line with the adopted inclusion criteria, on the one hand, allowed ensuring homogeneity within a group, fully corresponding to pertinent characteristics of women aged 35-55 from Krosno, Poland, while on the other, resulted in reducing the number of potential recruits, which might well be regarded as the study limitation. The present results would gain even more credibility, when compared with the ones based on a much larger study sample. These limitations highlight the need for a prospective cohort study to establish health-promoting behaviors of women and their opinions on the quality of fitness services. The research tool was a self-made questionnaire, which can also be considered a limitation of the study. Future research could use standardized tools to assess health behaviors and injuries in adults. Taking into account the general importance and the sheer scale of the issue under study, any subsequent reports would contribute significantly to its distinction, while at the same time giving it the importance it deserves in scientific research.

Conclusions

1. A small number of women consulted their own health with a doctor before participating in fitness classes. Women who had not suffered an injury in the past declared such consultations more often than women with a history of injury. Most women, regardless of a history of trauma, participated in activities 1-2 times a week or 3-4 times a week, once a day. Most women, regardless of the group, paid attention to the choice of clothing and footwear, as well as proper diet. Most often drew their knowledge of proper nutrition not only from radio, television and magazines, but also from books and scientific articles.
2. Wellness treatments were not popular among women attending fitness classes, although those who had suffered an injury in the past were more likely to choose hydrotherapy, and those who had not experienced an injury were more likely to choose massage.
3. The majority of the female respondents, regardless of the group, felt that the room was adequately suited for fitness classes, with 15-20 people participating in activities. Women who experienced trauma mostly rated the room in terms of the ratio of its surface area to the number of participants as optimal, while in the opinion of the majority of those who did not experience trauma, the room was too small.
4. The vast majority of the female respondents, regardless of the group, considered the instructor's competence to be high, and declared that the instructor always conducts a warm-up before the main part of the class, adjusts the difficulty level of the exercises and the nature of the loads to the capabilities of the participants, corrects the participants' mistakes, explains the technique of new exercises and applies stretching at the end of the training unit.

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Informed consent was obtained from all individuals included in this study. The research related to human use was complied with all the relevant national regulations, institutional policies and in accordance the tenets of the Helsinki Declaration, and was approved by the Bioethics Review Committee, University of Rzeszów (Approval Ref. No. 10/1/2017).

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