



Psychological gender among women involved in different forms of group physical activity

Płeć psychologiczna kobiet praktykujących różne formy grupowej aktywności fizycznej

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ABSTRACT

INTRODUCTION: Gender is a combination of psychological characteristics ascribed by culture to men or women. It is unrelated to biological sex but affects one's experiences, reactions and behavior. The aim of the study was to compare the psychological gender of women involved in different forms of physical activity.

MATERIAL AND METHODS: We examined 112 adult women who have been practicing yoga (Group A) or other group activities (Group B) at least once monthly for at least 1 month. We used the Sex Role Inventory (SRI) and short version of the International Physical Activity Questionnaire (IPAQ).

RESULTS: There were no statistically significant differences between Group A and Group B with regard to age, body mass, BMI, or duration of physical activity per week ($p > 0.05$). The mean IPAQ score was high in both groups (> 1500 MET); the difference between the groups was not significant ($p > 0.05$). The majority of subjects from Group A displayed feminine gender (57.14%) as measured by the SRI, followed by undetermined (28.57%), androgynous (10.71%), and masculine (3.57%). The majority of subjects from Group B exhibited androgynous (35.71%) gender, followed by undetermined (33.93%), masculine (23.21%), and feminine (7.14%). The differences between the groups were significant in that regard ($p < 0.001$). No relationship between the results of the SRI and IPAQ questionnaire was noted ($p > 0.05$).

CONCLUSIONS: Women practicing yoga differ with respect to the type of psychological gender from women involved in other physical activities. Feminine gender dominates in the first group, while androgynous is most common in the latter.

KEY WORDS

fitness, yoga, psychological gender

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STRESZCZENIE

WSTĘP: Płeć psychologiczna jest zbiorem cech psychicznych, kulturowo przypisywanych mężczyźnie lub kobiecie. Nie ma związku z płcią biologiczną, ale wpływa na sposób przeżywania, reagowania i zachowania człowieka. Celem badania było porównanie płci psychologicznej kobiet uprawiających jogę oraz inne formy grupowej aktywności fizycznej.

MATERIAŁ I METODY: Zbadano 112 dorosłych kobiet, które przynajmniej od 1 miesiąca uprawiały minimum 1 raz w tygodniu jogę (grupa A) lub inną grupową formę aktywności fizycznej (grupa B). Zastosowano Inwentarz Płci Psychologicznej (IPP) oraz Skrócony Międzynarodowy Kwestionariusz Aktywności Fizycznej (IPAQ).

WYNIKI: Między grupą A i B nie wykazano różnic istotnych statystycznie w zakresie: wieku, masy ciała, BMI, czasu aktywności fizycznej w tygodniu ($p > 0,05$). W kwestionariuszu IPAQ średni wynik w obu grupach był wysoki (> 1500 MET), różnica między grupami nie była istotna ($p > 0,05$). W inwentarzu IPP najczęściej badanych z grupy A prezentowało płeć psychologiczną kobiecą (57,14%), następnie nieokreśloną płciowo (28,57%), androgeniczną (10,71%) i męską (3,57%). W grupie B najczęściej badanych miało płeć psychologiczną androgeniczną (35,71%), następnie: nieokreśloną (33,93%), męską (23,21%) i kobiecą (7,14%). Różnica między grupami była w tym zakresie istotna ($p < 0,001$). Nie potwierdzono zależności między wynikami inwentarza IPP i kwestionariusza IPAQ ($p > 0,05$).

WNIOSKI: Kobiety uprawiające jogę różnią się w zakresie płci psychologicznej od kobiet uprawiających inne formy aktywności fizycznej. W pierwszej grupie dominuje płeć psychologiczna żeńska, w drugiej zaś androgeniczna.

SŁOWA KLUCZOWE

płeć psychologiczna, fitness, joga

INTRODUCTION

The concept of psychological gender has been the subject of scientific research for a long time. The research by Bem [1] is of particular importance for knowledge on psychological gender identity. The results of her work allowed the current thesis regarding the dichotomy of sexual roles, according to which femininity and masculinity were conceived as two ends of one continuum to be rejected. A new way of understanding them as two separate dimensions of personality was adopted [1]. According to Bem, psychological gender is shaped since childhood on the basis of social definitions of femininity and masculinity encompassing a network of sex-related associations pertaining to, among others anatomical structure, reproductive functions, division of roles, or personality attributes ascribed to men or women by the society. Associating women with tenderness, protectiveness, or the capacity to sacrifice is an example of such typical attributes. Typical male attributes include firmness, dominance, or rivalry. Four types of psychological gender have been distinguished based on research [2]:

- sexually defined persons with psychological characteristics corresponding to their biological sex,
- androgynous persons with equally strong feminine and masculine cultural characteristics,
- sexually undetermined persons exhibiting only some characteristics culturally ascribed to femininity or masculinity regardless of biological sex,

- cross-sexually defined persons characterized by psychological characteristics corresponding to the opposite from their biological sex.

The concept of self is determined by a system of psychological characteristics related to sex. Sexually determined or cross-sexual persons form their concept of self on the basis of a socially defined gender paradigm, while androgynous and sexually undefined persons – beyond that paradigm. According to Bem's theory, the concept of self and gender paradigm, and therefore the character of those structures is decisive to the course of receiving and processing information, as well as regulating behavior.

Numerous empirical data indicate the significant influence of psychological gender type on human functioning, development, and psychological adaptation [3,4]. Sexually determined subjects choose behaviors consistent with their sexual paradigm more often than androgynous people. Stepping beyond that scheme causes tension, fear, and nervousness. However, compared to androgynous persons, sexually undetermined individuals are more likely to succumb to social pressures, have lower self-esteem, are less open-minded, sensitive and protective. By summarizing many years of studies on sexual identity, it can be concluded that androgynous people have a broader repertoire of gender-related behaviors than other types; thus, they perform better in social situations [5].

Gender identity is also an area of interest for scientists who study factors influencing sports activity. The stereotyping of gender-related roles and parents' convictions regarding types of sports suitable for a girl or



a boy determine the involvement in particular disciplines and sports performance as early as during early childhood [6]. Moreover, studies indicate that for girls, involvement in sports is more strongly influenced by the father's gender stereotyping or that of the mother. Consequently, female athletes whose fathers believe that a given discipline is suitable for girls have stronger convictions regarding their own competence in sports and more often engage in physical activity [7].

A review of studies on the stereotyping of gender roles from the past several years warrants the conclusion that the intensity of psychological characteristics attributed to masculinity is growing at a regular rate among women. Concomitantly, the level of characteristics associated with femininity remains unchanged [8]. Therefore, it seems important to ask whether a type of sports activity is still related to gender, or have these differences become blurred? Analysis of scientific publications from Pubmed and other databases from the years 2006–2016 indicates that the topic of the relationship between psychological gender and sports has not been very broadly explored.

Very few studies have been found in that area [9,10,11,12] concerning the relationship between psychological gender and the practice of various sports disciplines. A broad review of scientific publications from the past 20 years has showed that data on the association of psychological gender and practicing yoga are lacking. However, the topic seems interesting from the theoretical and practical perspective. Yoga is becoming an increasingly popular form of physical activity but generally an ever more sedentary lifestyle is observed [13]. Adjusting the type of physical activity to one's specific personality traits could have a positive influence on the motivation to exercise. Moreover, taking into account preferences related to both feminine and masculine gender in the organization of sports activities would satisfy the needs of a broader public. The goal of this work was to compare the psychological gender traits of women who practice yoga and other group sports activities.

MATERIAL AND METHODS

Study group

We examined 140 adult women participating in fitness activities. The following inclusion criteria were applied: female sex, age above 18 years old, practicing group yoga or other forms of group physical activity at least once a week for at least one month, and consent to participate in the study. Exclusion criteria were as follows: interchanging participation in yoga and other group fitness activities, profession or experience related to increased body awareness (physiotherapist,

dancer, fitness instructor, personal trainer), declared eating disorders, withdrawn consent to participate in the study.

Finally, 112 women who fulfilled the inclusion criteria and completed the questionnaires were qualified for the study. The study group was divided arbitrarily depending on the form of physical activity: Group A – yoga, or Group B – other activities (ABT, BS, TBC, aerobics, step aerobics).

Research tools

The study was conducted as a diagnostic survey. Three questionnaires were used: the short version of the International Physical Activity Questionnaire (IPAQ), Sex Role Inventory (SRI), and our own survey.

The short IPAQ version adapted to Polish by Biernat et al. [14] contains seven questions concerning all kinds of everyday physical activity associated with work or leisure. Only activities lasting at least 10 minutes without a break were taken into consideration. The level of physical activity was calculated by multiplying the number of days in a week when the particular physical activity was performed by the duration (in minutes) of that activity. The result was multiplied by the MET (Metabolic Equivalent of Work) index for the given activity (strenuous exercise – 8 MET, moderate exercise – 4 MET, walking – 3.3 MET). Resting time was not taken into account. The sum of all the results for individual activities was a weekly measure of physical activity presented as MET min/week. The final result belongs in one of three categories determining the physical activity level: low (< 600 MET min/week), moderate (600–1 500 MET min/week), or high (> 1 500 MET min/week).

The SRI was developed by Kuczynska [15] and is based on the concept of psychological gender created by Bem. It consists of 35 entries describing character features. Fifteen features are ascribed by culture to men (e.g. dominating, independent, arrogant), 15 to women (e.g. flirtatious, tender, caring), while the remaining 5 are considered neutral (e.g. friendly, tolerant, sympathetic). The subjects were asked to determine to what degree they describe their own person on a scale from 1 to 5, where the numbers are given the following meaning: 1 – never pertains to me, 2 – rather does not pertain to me, 3 – moderately pertains to me, 4 – rather pertains to me, 5 – always pertains to me. The obtained results enable the masculinity/femininity level to be determined and the subject to be assigned to one of four types of psychological gender: feminine, masculine, androgynous, and undetermined.

Our own questionnaire was created for the purpose of this study. It consists of 10 questions regarding: the type of group physical activity, frequency of that activity, practice period, age, education, professional status,



marital status, address, height and body mass. It allowed further determination of BMI (Body Mass Index) using the following equation: body mass (kg)/height (m²).

Procedure

The study was performed between 1.03.2015 and 30.04.2015 in several facilities in Bielsko-Biala. Some of them specialize in yoga classes, while the remaining facilities are typical fitness clubs. All of them consented to participate in the study. The survey questionnaires were handed to the participants at the beginning of their class. Before the beginning of the study the participants were informed of its purpose, its anonymity, and the possibility of refusing to participate in the study. Each participant received a set of four questionnaires. They filled them out on their own on site or at home and left them at the reception. There was an unlimited time to respond to the questions. The survey questionnaires were handed out in all the facilities several times a week, across all activities and skill levels in order to ensure a random sampling. The survey questionnaires were retrieved from the clubs at the end of each week. The study was approved by the Bioethics Committee (KNW/0022/KB/133-1/14).

Statistical analysis

Statistical analysis were conducted using STATISTICA 14.0 software. The Shapiro-Wilk test was used to test normal distribution of the variables. Due to the fact that most variables had non-normal distributions, we used nonparametric tests as the principle. In univariate analysis we used the chi² and Mann-Whitney U test (to test for significance of differences between groups), Spearman's rank correlation coefficient (to detect the significance of correlations between characteristics). The statistical significance level was set at $\alpha = 0.05$.

RESULTS

The descriptive characteristics of the study groups were compiled and checked for the homogeneity of sociodemographic variables that could exert an indirect influence on psychological gender. The age, body mass characteristics, and period of physical activity are presented in Table I.

Groups A and B were homogeneous with regard to age, BMI, time devoted to fitness during the week ($p > 0.01$), but differed with respect to the period of physical activity ($Z = 5.27$; $p < 0.001$). It was significantly longer in Group A than in Group B.

In Group A the majority of subjects (61%) had a higher education, while in Group B respondents with higher and secondary education accounted for 46% each. In both groups the majority of subjects works (A – 85%, B – 71%), with a predominance of intellectual workers. As much as 80% of Group A respondents and 82% of Group B respondents lived in the city. The majority of subjects from both groups declared being in a relationship (A – 64%, B – 61%). The details are presented in Table II.

Table I. Study group characteristics including age, body weight, and physical activity

Tabela I. Charakterystyka badanych grup ze względu na wiek, masę ciała i aktywność fizyczną

Variable	Group A		Group B	
	M	SD	M	SD
Age (years)	34.10	7.94	32.51	9.55
Body weight (kg)	62.46	5.92	64.98	9.93
BMI (kg/m ²)	22.05	1.43	23.00	3.51
Length of physical activity (years)	4.35	0.99	3.03	1.24
Time of physical activity per week (hours)	2.32	1.36	2.60	1.39

M – arithmetic mean, SD – standard deviation

Table II. Demographic features of study groups

Tabela II. Cechy demograficzne badanych grup

Variable	Group A		Group B		
	N	%	N	%	
Educational level	vocational	5	9	3	5
	secondary	17	30	26	46
	higher	34	61	26	46
Professional status	student	2	4	12	21
	physical worker	8	14	12	21
	intellectual worker	40	71	28	50
	unemployed	1	2	1	2
Place of residence	other	5	9	3	5
	city	45	80	46	82
	village	11	20	10	18
Partnership status	single	20	36	22	39
	in partnership	36	64	34	61

N – number of participants

The significance of the differences between the groups with regard to the demographic variables was assessed. Group A and B respondents did not differ with regard to educational level, place of residence and partnership status, but a difference was observed between both groups with respect to professional sta-



tus $\chi^2 = 10.56$; $p < 0.05$. Group B consisted of a greater number of students, physical workers and a smaller number of intellectual workers than Group A. The results varied with regard to the SRI scores. The details are presented in Table III.

Table III. SRI scores in study groups
Tabela III. Wyniki badanych grup w zakresie IPP

Group	Types of gender identity				N
	masculine	feminine	androgynous	undetermined	
A	2	32	6	16	56
B	13	4	20	19	56
Whole	15	36	26	35	112

N – number of participants

In Group A feminine gender was most strongly represented followed by undetermined, androgynous and masculine. In Group B the order was as follows: androgynous, undetermined, masculine, and least frequently feminine. It was demonstrated that the differences in the SRI scores between the groups are statistically significant ($\chi^2 = 37.64$; $p < 0.001$). The percentage distributions of the obtained values are presented in Figure 1.

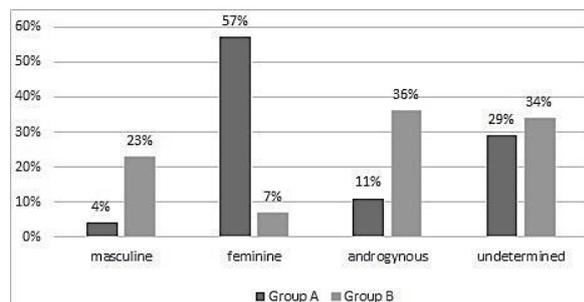


Fig. 1. Percentage values of SRI results in study groups.

Ryc. 1. Wartości procentowe wyników IPP w badanych grupach.

DISCUSSION

By analyzing the issue of female physical activity, it may be expected that sport, which is usually attributed to the male area of activity, would draw women with more masculine psychological characteristics. This dependence seems particularly important in relation to disciplines typically considered masculine, such as soccer, boxing, judo, wrestling, weightlifting, or combat sports. Studies confirm that women who practice sports typical for men more often possess androgynous and masculine psychological features than feminine or undetermined [10].

Our study revealed that women who practice yoga are more often characterized by feminine features com-

pared to women taking part in other kinds of group physical activities, where androgynous gender predominates. Yoga is an ancient Indian system of education, hygiene and treatment consisting of yoga philosophy, physical exercise, breathing exercises, relaxation and hygienic recommendations. Yoga practice limited to physical exercise (hatha yoga) aims to restore psychophysical well-being by working with the body, deep breathing and calming the mind. Assuming specific body positions (asana), maintaining them for a period of time, and consciously exiting them is the basis of hatha yoga. Practicing asana strengthens the muscles, improves body balance, relaxes and calms, enhances concentration, harmonizes emotions and the psyche [16]. Maintaining a specific position requires concentration on signals coming from the body, as well as awareness of one's abilities and limitations. It may be therefore assumed that women who practice yoga treat participation in yoga classes as a method of self-development through working on the body, seeking inner peace and balance, as well as increasing their own body awareness, not merely a way to achieve physical fitness.

Women practicing other kinds of physical activities are often focused on achieving a specific goal (better physique, increased strength and muscle mass, etc.). They treat participation in classes as a competition with themselves and others, while any positive changes represent success and constitute further motivation for even more intense training. Fitness classes favor characteristics typically considered masculine (strength or endurance training) but do not require resignation from feminine features (elements of dance or working with the body). Thus, women's participation in fitness classes does not necessitate masculinization, but allows them to enrich the feminine characteristics acquired during socialization with some masculine features, which might explain the results of our study.

The study conducted by Szmajke and Adamczuk [17] on the relationship between psychological gender and sports activity among male and female handball players show that androgynous gender also dominates among women participating in such physical activities. Soroka and Bergier [18] indicated, that 70% of the examined women practicing football were androgynous. The research by Pacut [19] demonstrated that the majority of female soccer players (considered a masculine sport) were androgynous, while in a group of women practicing synchronous swimming and gymnastics (typically a feminine sport) the majority were psychologically feminine. Moreover, Burdzicka-Wołowik [10] showed that androgynous women predominate among women who train gymnastics, swimming, or basketball. Starzomska and Kowalczyk [20] revealed that androgynous women are especially interested in sport, regardless of the discipline.



Our studies failed to demonstrate an association between the psychological gender type and physical activity level, which may ensue from the high levels of physical activity observed in both groups. It may be therefore concluded that psychological gender is not significantly associated with the amount of physical activity, but its form depends on the type of psychological gender.

This study possesses certain limitations allowing it to be treated as a pilot study or an introduction to broader analyses on the relationship between psychological gender and specific types of physical activity. Such limitations ensue from, among others the small group size and broad age range of the subjects. Moreover, the study criteria that included persons practicing yoga or other activities for at least one month did not exclude the possibility of participating in other forms of activity before that time, which might have influenced the results.

Taking into account the specifics of particular forms of physical activity and the results of our study, it may be postulated that the choice of physical activity should consider one's psychological characteristics, including the type of psychological gender. Especially sexually defined individuals would experience greater satisfaction from physical activities consistent with the features ascribed to a particular sex. Awareness of the type of psychological gender may aid in choosing a proper sports discipline, particularly with respect to individuals characterized by low motivation to exercise.

CONCLUSIONS

Women who practice yoga differ with respect to the type of psychological gender from women engaging in other physical activities.

Author's contribution

Study design – M. Bąk-Sosnowska
Data collection – A. Urban
Data interpretation – M. Bąk-Sosnowska
Statistical analysis – A. Urban
Manuscript preparation – M. Gruszczyńska
Literature research – M. Gruszczyńska, A. Urban

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