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Women's Well-Being, State and Trait Anxiety Regarding their Sport Activity

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Abstract

The aim of the paper is to identify the level of women's wellbeing regarding their sport activity, whereby we assume that athletes will have a higher level of wellbeing. The second aim is to determine the relationship between the individual dimensions of wellbeing and the level of state anxiety and trait anxiety. The research group consists of 107 women (20.03±1.47 years), divided into groups based on their sport activity (active 62, inactive 45). We used the standardized BDP questionnaire to determine the level of wellbeing. We used the standardized STAI questionnaire to determine the level of anxiety. We recorded a higher value of personal well-being in the sample of women actively participating in sport activities. In both the samples, we found an indirect relation between positive dimensions of personal well-being and state anxiety (in the case of the sample of women not participating in any sport activity even with trait anxiety). A direct relation between the negative dimensions of wellbeing and the level of state as well as trait anxiety was recorded only in the sample of women not participating in any sport activity. Our results correspond with other findings which suggest that regular sport activity increases the level of women´s personal well-being. In the same time, our results partially correlate with research according to which state anxiety and trait anxiety tends to influence subjective personal well-being negatively. Our findings indicate that sport activity can be a suitable instrument to increase women´s personal well-being.

Key words: *well- being, anxiety state, anxiety trait, sport activity, women*

Introduction

For a long time, the positive aspects of human life were not given adequate attention in psychology. Personal wellbeing has only come to the forefront of interest in psychological research in the last 20 years (Blatný et al., 2010). Personal wellbeing can be defined as a long-term emotional state that includes bodily, mental and social aspects, and makes a significant contribution to the overall quality of human life. The concept of personal wellbeing is applied in practice for states that last at least for weeks, rather than moments (Diener, & Biswas-Diener, 2008). In the literature on personal wellbeing its composition varies from author to author. The constructs used to represent personal wellbeing include long-lasting positive and negative emotional states, happiness, life satisfaction in major areas of life and self-evaluation or self-esteem (Sirgy, 2002 in Blatný et al., 2010).

A similar definition of personal wellbeing is used in Blatný et al. (2010), where it is described as a "long-lasting or persistent emotional state reflecting a person's overall satisfaction with their own life. A state of personal wellbeing can be expressed by varied emotional experience and cognitive content and therefore it is not considered a simple construct but rather a broad and diverse category of psychological variables." One of the aspects of personal wellbeing is physical fitness. This is the effect of sports activities on personal wellbeing and its dimensions. The term wellbeing is associated with both a holistic conception of health and a comprehensive understanding of lifestyle that includes multiple risks and protective factors. A high level of personal wellbeing can be taken as an indication of good prospects for handling long-term stress.

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Our work focuses on the relationship between personal wellbeing and sport, in particular the effect of participation in sports on aspects of personal wellbeing. For this reason, we adopt the definition of personal wellbeing used by Grob et al. (1991, in Džuka, 1995), where the construct includes both positive and negative dimensions. The positive dimensions include a positive attitude to life and a positive self-evaluation while the negative dimension includes depressive moods, physical problems and awareness of problems. With regard to differences between the sexes, Ryff (1989) claims that women score higher than men in the social component of personal wellbeing.

For the purposes of this research, it is necessary to clarify the distinction between state and trait anxiety. Slepička, Hošek and Hátlová (2011) describe anxiety as "an indistinct apprehension of danger that the subject is unable to describe or define precisely, but experiences as a very unpleasant sensation accompanied by rich somatic activation." Höschl, Libiger and Švestka (2004) also emphasise that anxiety is an "unpleasant emotional state whose cause cannot be precisely defined. It is a feeling that some threat is about to be realised but the person cannot formulate what it should be." The common factor in these definitions is that the cause of anxiety, the thing that evokes unpleasant subjective states in the individual, is not precisely defined. Expressions of anxiety are decidedly individual in character. Basic manifestations include going red in the face or extremely pale, changes in the voice, changes of posture, pain and pressure in the head, dizziness, tightness of the chest, trembling, overall weakness, disturbed sleep, sadness, decreased mental power, an overall bad mood and negative thoughts, feelings of hopelessness and helplessness. Praško, Vyskočilová and Prašková (2006) define the typical expressions of excessive anxiety based on its behavioural manifestations. The authors call them coping forms of behaviour. They divide them into avoidant behaviours (which lead only to a short-term reduction of anxiety and do not give the individual a chance to determine the difficulty of the stressful situation or the degree of stress that the situation causes the given individual), delaying (causing the accumulation of anxiety), seeking assistance and reassurance (directed mainly towards others- family, friends, loved ones), perfectionist behaviour (relating not only to a momentary experience of anxiety but also to anxiety as a character trait- striving to be perfect in all directions and fixation on details), neurotic phenomena that are revealed during the experience of anxiety- tapping feet or crossing legs, playing with random objects, biting nails, excessing eating, excessive smoking or alcohol use.

In contrast, trait anxiety is a longer-lasting aspect of personality that is mainly constitutional and causes the individual to experience frequent and excessive states of anxiety (Matějček, 2011). It can be described as a predisposition for the individual to experience anxiety and to react and behave anxiously.

Experiencing stress is one potential cause of anxiety (Lazarus, & Folkman, 2000). However, as the cited definition indicates, anxiety can present itself not only as a response to a stressful situation but also as an indistinct fear in advance of a difficult situation, or it can persist after a stressful situation has passed. Authors have linked such manifestations of anxiety to stress situations through the symptoms of post-traumatic stress disorder, which means that the experience of anxiety can last for a longer period (R.L. Atkinson, R.C. Atkinson, Smith, Bemd, & Nolen-Hoeksema, 1995). The present paper explores the possibility of a correlation of both anxiety as an experienced state and anxiety as a personality trait with personal wellbeing. Multiple studies have shown that adolescents with low levels of state and trait anxiety achieve higher scores for quality of life and personal wellbeing (Babinčák, Kačmárová, & Mikulášková, 2015).

One of the factors influencing individuals' anxiety levels is age. On average, anxiety is highest between the ages of twenty and thirty and then decline. Nevertheless, the development of an individual's anxiety must always be understood in terms of its specific aspects and the individual's experiences (Říčan, 2010). Research has also shown that there are aggregate differences in anxiety levels between the sexes. Both older and more recent research indicates that women experience anxiety more than men (Maeng, & Milad, 2015; Stewart, Taylor, & Baker, 1997; Breslau, Schultz, & Peterson, 1995). A frequently studied topic is the question of the relationship between a person's sports activity and their subjective experience. Sports activity is seen as an important aspect of life from several points of view including health, regeneration, social relationships and as part of life style. This paper works with the definition of sports activity in Fuchs, Klaperski, Gerber and Seelig (2015) as physical activity with increased energy expenditure that people engage in for pleasure, socialisation or health reasons. Research has generally tended to confirm the positive effect of sport in terms of mental wellbeing, self-esteem, stress relief and reduced symptoms of depression (Donaldson, & Ronan, 2006; Penedo, & Dahn, 2005; Hassmén, Koivula, & Uutela, 2000). In our view, this is because sports, whatever the athlete's level or aim, provide many benefits including mental hygiene, relaxation and increased self-confidence.

Methods

The research population was 107 women (20.03±1.47 years) divided into groups based on sports activity (62 sports participants-athletes and 45 sports non-participants-non athletes). The condition for classification as an athlete was to participate in at least three sports training sessions per week continuously for one year, regardless of whether their purpose was recreation or performance improvement.

The level of personal wellbeing was assessed using the Berne Wellbeing Questionnaire (BFW) originally developed by Grob et al. (1991) and standardised for Slovakia by Džuka (1995). The standardised questionnaire consists of 28 questions covering separate aspects of an individual's subjective wellbeing. The questionnaire implicitly works with three basic components of subjective wellbeing: habitual mental wellbeing, current mental wellbeing and current physical wellbeing (Džuka, 1995). The responses to the questions and items use 6-point Likert scales. The questions in the questionnaire can be plotted on five scales or dimensions (Džuka, 1995):

Dimension 1- Positive attitude to life: questions on the respondent's attitude to life events and the belief that one is leading a meaningful life

Dimension 2- Problem awareness: questions on the respondent's recognition and awareness of problems in their personal and environment

Dimension 3- Physical problems and reactions: questions measuring the physical reactions and related problems

Dimension 4- Self-evaluation: questions on the respondent's self-acceptance and their belief in their own value and ability to achieve goals

Dimension 5- Depressive mood: questions where a high score indicates the absence of enjoyment and meaning in life

Levels of state and trait anxiety were measured using the STAI questionnaire developed by Spielberger, Gorsuch and Lushene (1970, Slovak standardisation by Ruisel et al., 1980). The standardised questionnaire is based on two scales: x-1 and x-2. Scale x-1 is designed to measure the current state, which means the respondent's conscious subjective feelings of stress, tension, worry and fear, which vary in intensity and change over time. Half the items in the scale relate to their presence and the other half relate to their absence. Scale x-2 is designed to measure trait anxiety as a characteristic or tendency while respecting "individual differences in the tendency to perceive the world, the disposition to respond in a specific and predictable manner, individual differences in the expression of special emotional states and the positive correlation between the strength of personality and the intensity of the corresponding emotional state." The result for both scales is a whole number obtained by totalling the scale values (taking account of reversal scoring). The higher the score, the higher the level of state (x-1) or trait (x-2) anxiety. Ruisel et al. (1980) note that "in our part of the world, several original studies have been conducted confirming the validity of the theoretical model measuring anxiety as a trait and state, and also the utility of the STAI diagnostic method" (Ruisel et al., 1980).

The data was statistically tested- the Kolmogorov-Smirnov test was used to test for normality of distribution; the Mann-Whitney U-test was used to test differences between samples; and the Pearson correlation coefficient was used to determine the strength of the relationship between variables. Effect size was calculated using the coefficient r (r≥0.9- very strong relationship; r=0.7-0.9- strong relationship; r=0.5-0.7- moderately strong relationship; r = 0.3-0.5- weak relationship; r≤0.3- very weak relationship) (Pett, 1997).

This study was approved in advance by Ethics committee of Faculty of physical education and sport, Comenius University. Each participant voluntarily provided written informed consent before participating."

Results

Data evaluation looked at the relationship between respondents' average scores in the positive (Positive attitude to life and Self-evaluation) and negative (Physical problems, Depressive mood and Problem awareness) dimensions of personal well-being and whether they participated in sports activities or not.

The dimension of Positive attitude to life is made up of items determining the individual's view of their future, their enjoyment of life, the pleasure in life and the like. Women who participate in sport (athletes) have higher average scores than those who do not participate (non-athletes). The sample of women who participate in sport at least three times a week achieved an average point score of 4.20±0.10 points. The average score for non-athletes was 3.49±0.13 points. The difference between the two samples was therefore 0.71±0.16 in favour of women who participate in sports. This difference was significant at the 1% significance level (U=674.5; p=0.00; r=0.48). Similar results were found in the Self-evaluation dimension. The average score for women athletes was 4.52±0.11 points, while women non-athletes scored 3.96±0.12 points. The difference between the average scores for the samples is 0.56±0.17 in favour of women athletes. This result was significant at the 1% significance level (U=876; p=0.00; r=0.32). In both positive dimensions of personal wellbeing, women athletes achieved significantly higher scores than non-athletes.

The groups' results in the negative dimensions of personal wellbeing were also analysed. The Problem awareness dimension includes items on respondents' concerns about people around them, their own interpersonal relationships, their work, their health, their aging, their partner and their finances. There was a higher average score among non-athletes (2.63±0.11 points) than among athletes (1.97±0.08 points). The difference between the two groups' average results is 0.66±0.13 points, which is significant at the 1% significance level (U=662.5; p=0.00; r=0.44). The dimension for Physical problems includes items on somatic problems such as levels of pain, fatigue, loss of appetite, presence of illness, dizziness or heart palpitations. In this dimension the women non-ath-

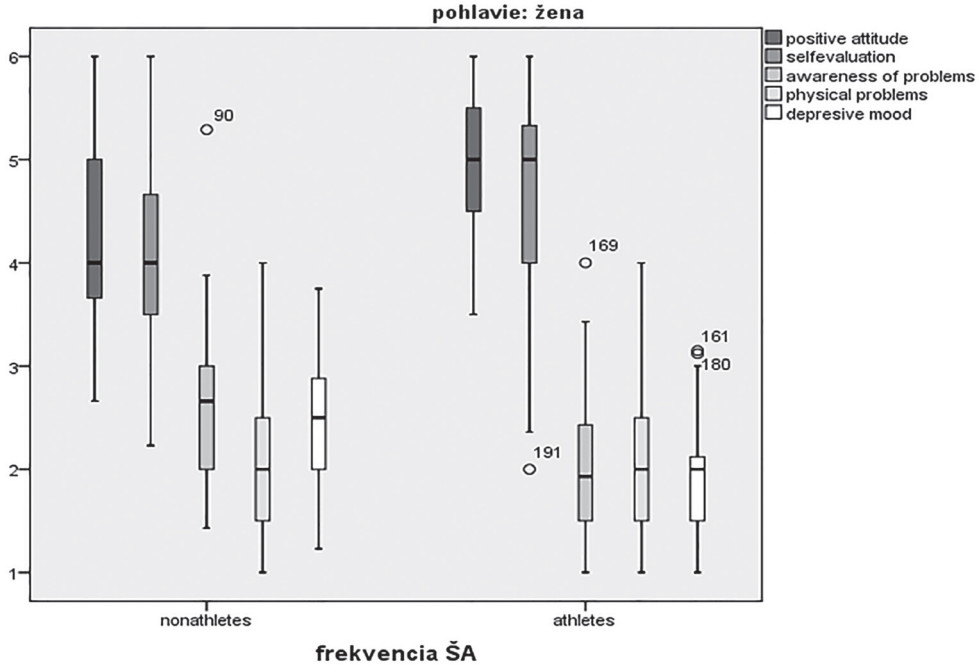

Figure 1. Average values for each dimension of the personal wellbeing of women athletes and non-athletes

letes had a higher average score (2.06±0.11 points). The average score for the group participating in sport was 1.94±0.09 points. The difference between the two groups' average results is 0.12±0.13 points, which is not statistically significant (U=1237.5; p=0.32; r=0.09).

The dimension Depressive mood is made up of items on activity levels, interest in other people, general interests and the like. Women non-athletes had the highest score in this dimension (2.47±0.84 points). The average score of women athletes was 1.85±0.06 points. The difference between the average results of athletes and non-athletes was 0.62±0.10 points. This difference was significant at the 1% significance level (U=575; p=0.00; r=0.50) (Figure 1).

The results show that in all three negative dimensions of personal wellbeing non-athletes had a higher average score than athletes, but these results were statistically significant only for the dimensions Depressive mood and Problem awareness (Table 1).

Table 1. Average values for each dimension and the differences between women athletes and non-athletes

Dimension of wellbeing	Sport activity	Median	Mean	Mann- Whitney U	p- value
Positive attitude	athletes	4.38±0.86	4.5±0.09	393.5	0.00**
	nonathletes	3.73±0.84	3.66±0.14		
Self evaluation	athletes	4.83±0.86	4.77±0.12	466.0	0.00**
	nonathletes	3.94±1.0	3.95±0.17		
Awareness of problems	athletes	1.87±0.63	1.96±0.08	662.5	0.00**
	nonathletes	2.58±0.73	2.62±0.11		
Physical problems	athletes	1.91±0.68	1.94±0.09	1237.5	0.32
	nonathletes	2.13±0.68	2.06±0.01		
Depresive mood	athletes	1.92±0.51	1.85±0.06	575.0	0.00**
	nonathletes	2.47±0.56	2.47±0.08		

Another aim of the present research was to analyse the relationships between the dimensions of personal wellbeing and levels of state and trait anxiety in relation to sports activity. Among women athletes there was a negative correlation between scores for the positive dimension of personal wellbeing-positive attitude and levels of state and trait anxiety. This relationship is statistically significant at the 1% significance level in both cases. A positive correlation at the 5% significance level was found between scores in the dimension Problem awareness and levels of state and trait anxiety. There is also a significant positive correlation between respondent's physical problems and their level of depressive mood (Table 2).

Table 2. Relationship between dimensions of personal wellbeing and state and trait anxiety for women participating in sports

	Positive attitude	Self evaluation	Awareness of problems	Physical problems	Depresive mood	Anxiety state	Anxiety trait
Positive attitude	1.00	0.17 0.20	0.07 0.59	-0.16 0.21	-0.14 0.06	-0.35** 0.01	-0.38** 0.00
Self evaluation	0.17 0.20	1.00	0.18 0.16	-0.17 0.20	-0.11 0.42	-0.14 0.29	0.03 0.82
Awareness of problems	0.07 0.59	0.18 0.16	1.00	0.14 0.26	-0.02 0.86	0.26* 0.04	0.26* 0.04
Physical problems	-0.16 0.21	-0.17 0.20	0.14 0.26	1.00	0.32* 0.01	0.52** 0.00	0.32* 0.01
Depresive mood	-0.24 0.06	-0.11 0.42	-0.02 0.86	0.32* 0.01	1.00	0.18 0.15	-0.04 0.74
Anxiety state	-0.35** 0.01	-0.14 0.29	0.26* 0.04	0.52** 0.00	0.18 0.15	1.00	0.73** 0.00
Anxiety trait	-0.38** 0.00	0.03 0.82	0.26* 0.04	0.32* 0.01	-0.04 0.74	0.73** 0.00	1.00

In the sample of women non-athletes, there were several significant relationships between the dimensions of personal wellbeing and levels of state and trait anxiety. A positive correlation was found between the score for the negative dimension Problem awareness and levels of state anxiety (5% significance level) and trait anxiety (1% significance level). This was to be expected in view of the content of these variables. A significant positive correlation was found between the scores in all three negative dimensions of personal wellbeing and levels of state and trait anxiety, and a negative correlation was found between the scores in the two positive dimensions of personal wellbeing and levels of state and trait anxiety.

There was also a significant correlation between the scores in each dimension of personal wellbeing. Between the positive dimensions of personal wellbeing- Positive attitude to life and self-evaluation there is a positive relationship at the 1% significance level and there is also a negative correlation at the 1% or 5% significance level between the scores in each negative dimension of personal wellbeing and each positive dimension of personal wellbeing (Table 3).

Table 3. Relationship between dimensions of personal wellbeing and state and trait anxiety for women not participating in sports

	Positive attitude	Self evaluation	Awareness of problems	Physical problems	Depresive mood	Anxiety state	Anxiety trait
Positive attitude	1.00	0.47** 0.00	-0.39** 0.01	-0.39** 0.00	-0.55** 0.00	-0.50** 0.00	-0.47** 0.00
Self evaluation	0.47** 0.00	1.00	-0.30* 0.05	-0.32* 0.03	-0.47** 0.00	-0.51** 0.00	-0.56** 0.00
Awareness of problems	-0.39** 0.01	-0.30* 0.05	1.00	0.22 0.14	0.38** 0.01	0.37** 0.01	0.55** 0.00
Physical problems	-0.39** 0.00	-0.32* 0.03	0.22 0.14	1.00	0.50** 0.00	0.51** 0.00	0.37* 0.01
Depresive mood	-0.55** 0.00	-0.47** 0.00	0.38** 0.01	0.50** 0.00	1.00	0.42** 0.00	0.55** 0.00
Anxiety state	-0.50** 0.00	-0.51** 0.00	0.37* 0.01	0.51** 0.00	0.42** 0.00	1.00	0.71** 0.00
Anxiety trait	-0.47** 0.00	-0.56** 0.00	0.55** 0.00	0.37* 0.01	0.55** 0.00	0.71** 0.00	1.00

Discussion

The results confirm the frequently discussed beneficial effects of sports on women's subjective experience of personal wellbeing. The findings also show that women who take part in sports have a stronger positive attitude to life and greater self-esteem than women who do not take part in sports. There was also a significantly greater level of Depressive mood and Awareness of problems among women non-athletes than athletes.

These findings are in line with previous research in this area. Cramer, Nieman and Lee (1991) studied the relationship between regular sports activity and personal wellbeing. The research sample comprised women from the USA. The results of the authors' research showed that sport increased respondents' personal wellbeing. Fox (1999) also demonstrated a positive effect of sports activity on the personal wellbeing of English women. Penedo and Dahn (2005) and McAuley and Rudolph (1995) demonstrated sport's positive effect on the positive aspects of women's personal wellbeing. Weyerer and Kupfer (1994) showed that physical activity increased the level of personal wellbeing and could even fulfil a preventative function. Our findings on the negative aspects of personal wellbeing are in line with the results of De la Cruz-Sanchez et al. (2011), who studied the relationship between sports leisure activities and personal wellbeing in a sample of 29,000 men and women living in Spain. The authors concluded that sports leisure activity was associated with a lower incidence of negative mental health indicators such as depressive mood, depression and anxiety.

Looking more in depth, the findings of the present research demonstrated a significant difference between women who do and do not participate in sport in the dimension of depressive mood at the 1% significance level. Research by Ensel and Lin (2004) with American respondents found that the more an individual takes part in sport, the less they manifest negative mental and somatic symptoms, which supports our findings regarding negative aspects of personal wellbeing. The results of the present research support a general recommendation for women to engage in at least three sports training sessions per week to strengthen the positive aspects of their personal wellbeing- in particular their positive attitude to life and their level of self-evaluation (self-esteem).

Our research also found a significant link between the level of personal wellbeing and certain aspects- positive attitude, awareness of problems and physical problems- with the levels of state and trait anxiety in women who participated in sport and a significant relationship between all aspects of personal wellbeing and levels of state and trait anxiety among women who did not take part in sports. The research showed that for women who participated in sport, increasing levels of anxiety were associated with increasing awareness of problems and physical problems, and a decreasing positive attitude to life. As regards trait anxiety, it can be said that the higher its level, the greater the awareness of problems and the level of physical problems, and the lower the respondent's positive attitude to life. In the case of women not participating in sport, increasing levels of state and trait anxiety were associated with increases in all three negative dimensions of personal wellbeing and lower levels of both positive dimensions of personal wellbeing. These findings are additional evidence of the frequently discussed benefits of sports activity for human experience.

Our research also examined the question of the relationship between the different aspects of personal wellbeing and levels of state and trait anxiety. Domestic and foreign research has tended to map factors affecting quality of life in aggregate and the construct of personal wellbeing as a "subcategory" of quality of life has received relatively little attention. Our findings correspond to some extent with other findings that states of anxiety (Diener et al., 1999) and anxiety as a personality trait (De Neve, & Cooper, 1998) tend to have a negative effect on subjective personal wellbeing. Our research in this area was inspired by the finding of Babinčák, Kačmárová and Mikulášková (2015) that the level of anxiety as a personality trait contributed to variability in values for quality of life in several of its aspects. They conclude that a person's trait anxiety is the strongest predictor of subjective evaluation of quality of life in both the psycho-social and cognitive areas.

Knowledge of this area remains limited, however, and it deserves more detailed attention. Although there are strong indications of a connection between the mentioned variables, it is not necessarily clear how anxiety and the aspects of personal wellbeing determine each other. Further research would also help to identify ways to work with the experience of stress to increase women's personal wellbeing.

The results of the present research demonstrate a higher level of personal wellbeing among women who participate in sports in the sense that there was a higher level of the positive aspects of personal wellbeing and also lower levels of the negative aspects. This means that our findings on the positive aspects of personal wellbeing are supported by the findings on negative aspects- the lower levels of negative aspects of personal wellbeing among women athletes can be seen as significant supporting information for findings on the level of positive aspects for women in relation to their participation in sports. The findings contribute to our overall understanding of the personal wellbeing of women who do and do not participate in sports.

Anxiety, whether as a temporary state or a personality trait, is a factor that can have a strong influence on a person's daily life. Women's predisposition to anxiety and their experience of anxiety are greater than men's, which is why the present study focuses on women. It would be interesting for future research to compare men's and women's levels of state and trait anxiety. As we see the quality of personal wellbeing is an important part of human life, it would be useful to pursue further research into the relationships between the aspects of personal wellbeing and the experience of state and trait anxiety among women because the results of the present work indicate several significant positive and negative relationships between these variables. Observing the increase in the experienced level of positive aspects and the corresponding decrease in negative aspects of personal wellbeing, it would be useful to detect how these variables determine and influence each other.

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Conflict of Interest
The authors declare that there are no conflict of interest.

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