

# A comparative analysis of body awareness in women practising yoga and volleyball players

Aleksandra Muda<sup>1</sup>, Alicja Długołęcka<sup>2</sup>

<sup>1</sup>Faculty of Rehabilitation; Józef Pilsudski University of Physical Education in Warsaw, Poland

<sup>2</sup>Department of Ergotherapy, Faculty of Rehabilitation; Józef Pilsudski University of Physical Education in Warsaw, Poland

**Correspondence to:** Aleksandra Muda, email: [aleksandra.muda@op.pl](mailto:aleksandra.muda@op.pl)

**DOI:** <https://doi.org/10.5114/phr.2021.111809>

**Received:** 16.02.2021 **Reviewed:** 19.03.2021 **Accepted:** 19.03.2021

## Abstract

**Background:** In recent years, the concept of "body awareness" has emerged as a subject of scientific study in a wide range of health issues. Bodywork can include both sports participation and the practice of yoga. Therefore, the role of somatognosis is worth using to expand physiotherapists' awareness and knowledge of the use of mental practices and psychotherapy in injury prevention and in the development of body awareness, which may be helpful during recovery.

**Aims:** The purpose of this study was to verify the development of body awareness when practising yoga or a professional sport, to determine whether athletes should undertake mental practices outside of their sport, and how they compare to body-conscious individuals. The effects of mental practices and sports on sensitivity in experiencing emotions, needs, and non-emotional bodily processes are explored.

**Material and methods:** The study included 64 female yoga practitioners and 64 female volleyball players. The Body Awareness Questionnaire (BAQ), the Mindful Attention Awareness Scale (MAAS) and open-ended questions developed by the researcher were used to compare the body awareness of the study groups.

**Results:** Women practising yoga showed greater body awareness in the BAQ and MAAS questionnaire when compared to female volleyball players. Yoga contributes more to developing mindful awareness and sensations unrelated to emotions. In contrast, professional sports are more likely to lead athletes to ignore physical discomfort and tension; they are more likely to associate self-awareness with self-knowledge rather than the concept of mindfulness.

**Conclusion:** There was a noticeable consistency in the theoretical assumptions, expected outcomes, and the results reported by the subjects.

## Key words

volleyball, yoga, body awareness, mindfulness, somatognosis.

## Introduction

In recent years, the term "body awareness" has emerged as a subject of scientific investigation in a wide range of health issues. Although a clear definition is rarely given [1,2], most of them emphasise that body awareness requires a careful focus on the internal sensations of the body. Body awareness, also known as somatognosis, is defined in psychology as, quote, "*The subjective harnessing of bodily sensations arising under the influence of stimuli that have their source both outside and inside the body*" [3]. It is understood as sensitivity to movement nuances, becoming aware of how the body executes movement and experiences it in relation to space, time, and energy [4]. It also involves feeling inner sensations coming from the body. Concentration is crucial here, without which it is difficult to achieve the intended effect [5].

Bodywork can include playing sports as well as practising yoga. For the purpose of this paper, it is useful to briefly characterise the activities listed, which are a key component of the conducted research. Yoga induces activation of the parasympathetic nervous system responsible for the relaxation response, lowering blood pressure, heart rate, activating limbic areas of the brain, and inhibiting activation of the sympathetic nervous system, which is responsible for stress among other things [6,7]. Yoga incorporates asanas (poses), pranayama (breathing exercises), and meditation [8]. It can cause activation of the parasympathetic nervous system to the point that it becomes dominant in stressful situations [9]. Therefore, everyday yoga practice has several benefits, such as reduced anxiety in stressful situations and increased confidence and control associated with speaking [10].

In the case of sport, studying its effects on somatognosis can be problematic. In addition to their sport, athletes' body awareness may also be influenced by a variety of mental practices that would refine psychological skills. The sport presents both physical and psychological challenges [11] that athletes must face to achieve satisfactory

results. For professional athletes, methods that involve general body relaxation, facilitate recovery after exercise [12], improve mental toughness, increase confidence, and help control mindfulness by stopping thoughts and thinking positively are important [13].

The role of somatognosis is worth utilising to expand physiotherapists' awareness and knowledge of the use of mental practices and psychotherapy to prevent injuries and develop body awareness that may prove beneficial during recovery. In addition, it can effectively improve communication with the patient, who will be more precise in defining their symptoms. Assuming that yoga influences body awareness to a greater extent, comparing the effects of mental practices and sporting activities can effectively help those who take up physical activity become interested in bodywork [14].

## Aims

The primary purpose of this study was to compare the body awareness found in female yoga practitioners and female volleyball players. Knowing the characteristics of somatognosis in the groups presented above will allow us to analyse which activity is more effective in building body awareness and indicate the differences between the groups in their characteristics. The following hypotheses were formulated for comparative analysis: (1) Female yoga practitioners register body signals in the present to a greater extent than volleyball women. (2) Female volleyball players are more likely to ignore body sensations related to fatigue, pain, tension, while female yoga practitioners register them more. (3) Female volleyball players are more likely to ignore negative body stimuli. (4) Female Yoga practitioners focus more on the body sensations felt in the present moment. (5) Female volleyball players are more likely to treat their bodies instrumentally in relation to their minds, while female Yoga practitioners are

more likely to treat their bodies psychosomatically. (6) Female Yoga practitioners are more likely to associate self-awareness with the concept of mindfulness rather than knowing oneself. (7) Female volleyball players are more likely to consider self-awareness parameters related to goal orientation and less likely to consider nutrition and mindfulness. (8) Female yogis are more likely to develop self-awareness than female volleyball players. (9) Female volleyball players are more likely to lack knowledge on how they could develop self-awareness than female yogis.

## Material and methods

The sample consisted of 128 women equally (50%:50%) divided into active volleyball players and yoga practitioners. The study included women practising yoga for at least three years and volleyball players registered in the system of the Polish Volleyball Federation and holding a license authorising them to participate in sports events. All players have been training volleyball professionally for at least six years in the Polish first league.

A proprietary questionnaire was used to conduct the study and was completed anonymously. It contained a total of 41 questions divided into four sections. The first part of the questionnaire included questions about familiarity with the main concepts addressed in the paper, such as "corporeality" and "self-awareness," and listing areas in which the level of awareness is evaluated positively and negatively. The second section contains the Mindful Attention Awareness Scale (MAAS). The authors are associate prof. Kirk W. Brown, who specialises in the social psychology of mindfulness and its impact, and Associate Professor of Psychology at the University of California. Richard M. Ryan, a clinical psychologist and expert in motivation and self-determination. A 15-item scale was designed to assess attentiveness to the present moment and a sense of "here and now" [15]. The third section included the Body Awareness Questionnaire (BAQ) scale, which consists of 18 statements related to recognising bodily sen-

sations unrelated to emotions or somatic complaints that occur in everyday life. BAQ, similarly to MAAS, shows strong psychometric properties [6]. The study was conducted between February and March 2020, and participation was voluntary and anonymous. Participants received information about the study and signed a consent form to participate in the research—those who decided to participate filled out a prepared questionnaire by themselves. The subjects were divided into groups based on practised activities: volleyball or yoga.

A review of the results for each question was conducted to meet the stated objectives. Both individual questions and larger groups of questions were analysed. Questionnaires containing data from female athletes training recreationally or in amateur clubs were rejected. Student's t-tests and U-Mann-Whitney tests were used to examine the significance of differences in specific aspects of body awareness between volleyball players and yogis.

## Results

Based on the scores obtained through the questionnaires, female yoga practitioners had a mean score of 57.34 for MAAS and 93.20 for BAQ. On the other hand, female volleyball players scored 55.04 and 86.84, respectively, in the mentioned questionnaires. In the yoga group, the highest score in the MAAS questionnaire was 80 points, while in the BAQ, it was 125 points. On the other hand, in female volleyball players, the highest score achieved was 73 in MAAS and 118 in BAQ. The following **table 1** presents the MAAS questionnaire scores that had the largest differences between the two study groups.

Yogis almost never (16%) or very rarely (34%) try to ignore feelings of physical tension or discomfort. However, female volleyball players were more likely to select the category somewhat often and very often (31%) when asked about ignoring physical tension.

**Table 1.** Results of the MAAS questionnaire.

Statement	Group	MAAS score						
		Almost Always	Very Frequently	Somewhat Frequently	Somewhat Infrequently	Very Infrequently	Almost Never	Total
I tend not to notice feelings of physical tension or discomfort until they really grab my attention	Yoga [%]	8	19	14	9	34	16	100
	Volleyball [%]	11	31	31	10	11	6	100
I find myself listening to someone with one ear, doing something else at the same time	Yoga [%]	11	12	22	16	33	6	100
	Volleyball [%]	6	8	21	17	28	20	100
I find it difficult to stay focused on what's happening in the present	Yoga [%]	5	22	31	30	11	1	100
	Volleyball [%]	8	42	23	16	8	3	100
I snack without being aware that I'm eating	Yoga [%]	9	14	19	9	33	16	100
	Volleyball [%]	11	25	22	17	17	8	100

**Source:** Own materials based on the conducted research.

The next section of the questionnaire was devoted to analysing the prevalence of the degree of sensitivity to emotionless bodily processes (BAQ). Based on the results, 38% of female volleyball players are more sensitive to pain when compared to female yoga practitioners (25%). Yogis are more sensitive to symptoms coming from the body that herald illness (74% of yogis and 61% of

volleyball players). Responses near the extreme of "not applicable" were prevalent in answers from female volleyball players (22%) when compared to female yogis (17%). The majority of female yogis (71%) admitted the ability to identify the presence of fever in themselves with a score from 5 upwards. In female volleyball players, lower scores (30%) prevail. In further BAQ statements, 84%

of female yoga practitioners were able to sense the forthcoming atmospheric changes in the body, and 82% of them could tell when it was the best time to sleep. The second study group showed weather sensitivity in more than half of the

volleyball players (56%). Female volleyball players are characterised by poorer attunement to their circadian cycle, with 47% tuning in to their cycle, while 37% did not identify a preferred sleep time (table 2).

**Table 2.** Results of the BAQ questionnaire.

Statement	Group	BAQ score							
		Not at all true of me	2	3	4	5	6	Very true of me	Total
I can always tell when I bump myself whether or not it will become a bruise	Yoga [%]	2	12	17	16	28	16	9	100
	Volleyball [%]	6	9	13	17	17	25	13	100
I know in advance when I'm getting the flu	Yoga [%]	3	6	8	9	27	22	25	100
	Volleyball [%]	5	12	5	17	25	23	13	100
I know I'm running a fever without taking my temperature	Yoga [%]	3	10	10	6	20	31	20	100
	Volleyball [%]	11	8	11	25	15	14	16	100
I notice specific body responses to changes in the weather	Yoga [%]	5	3	3	5	23	30	31	100
	Volleyball [%]	8	8	12	16	17	20	19	100
I can predict how much sleep I will need at night in order to wake up refreshed	Yoga [%]	7	2	3	6	20	31	31	100
	Volleyball [%]	17	6	14	16	25	16	6	100

**Source:** Own materials based on the conducted research.

The basic statistics of various body awareness aspects of the female respondents, taking into account the division into volleyball players and yoga practitioners, are presented in **Table 3**.

Student's t-tests and the Mann-Whitney U test were used to examine the significance of differences in specific aspects of body awareness between volleyball players and yogis. The results obtained are presented in **Table 4**.

**Table 3.** Body awareness of female respondents divided into volleyball players and yogis.

Statement	Total (N = 128)		Volleyball (n = 64)		Yoga (n = 64)	
	M	SD	M	SD	M	SD
5. I tend not to notice feelings of physical tension or discomfort until they really grab my attention	3.44	1.56	2.97	1.37	3.91	1.61
8. I rush through activities without being really attentive to them	3.88	1.08	3.88	1.09	3.89	1.07
14. I notice specific body responses to changes in the weather	5.08	1.78	4.63	1.86	5.53	1.58
15. I can predict how much sleep I will need at night in order to wake up refreshed	5.11	1.87	4.78	1.95	5.44	1.74

**Source:** Own materials based on the conducted research.

**Table 4.** Assessment of the significant differences in specific aspects of body awareness between female volleyball players and female yogis.

Statement	Test	Statistics	df	p	d Cohen's
5. I tend not to notice feelings of physical tension or discomfort until they really grab my attention	Student's t	3.5489 <sup>* a</sup>	126	<0.001	0.63
	Mann-Whitney U	1379 <sup>*</sup>		0.001	0.63
8. I rush through activities without being really attentive to them	Student's t	0.0818	126	0.935	0.01
	Mann-Whitney U	2021		0.895	0.01
14. I notice specific body responses to changes in the weather	Student's t	2.9640 <sup>* a</sup>	126	0.004	0.52
	Mann-Whitney U	1450		0.004	0.52
15. I can predict how much sleep I will need at night in order to wake up refreshed	Student's t	2.0079 <sup>*</sup>	126	0.047	0.36
	Mann-Whitney U	1625 <sup>*</sup>		0.039	0.36

\* p < 0.005; <sup>a</sup> Statistically significant result of Leven's test (p < 0.05), which suggests not meeting the condition of variance equality

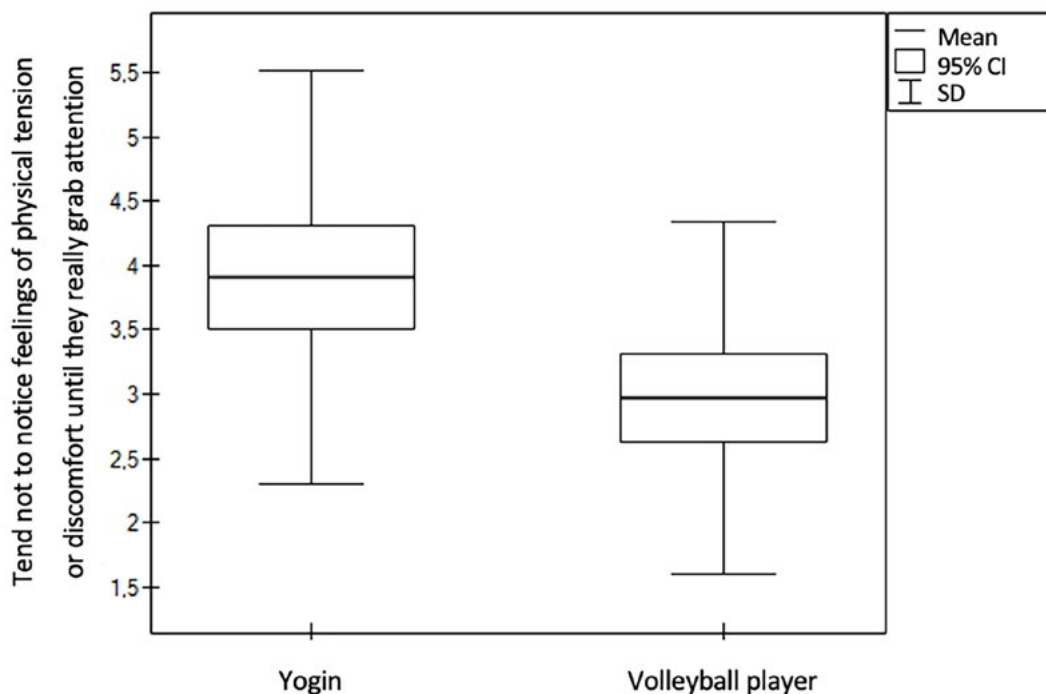
**Source:** Own materials based on the conducted research.

Using the Mann-Whitney U test, it was shown that female yogis (M = 3.91; SD = 1.61) have a significantly higher awareness in terms of ignoring feelings of physical tension or discomfort until it starts to bother them when compared to female volleyball players (M = 2.97; SD = 1.37), U = 1379; p = 0.001. The strength of the observed effect appeared to be moderate (Cohen's d = 0.63). The lack of normality of the variable distribution was confirmed by the Shapiro-Wilk test (p < 0.001). The lack of variance equality of the compared groups was supported by Leven's test (p = 0.008). There was no statistically significant difference between female yoga practitioners (M = 3.89; SD = 1.07) and volleyball players (M = 3.88; SD = 1.09), when considering activity performance without attentiveness, t (126) = 0.0818; p = 0.935.

The results of the Mann-Whitney U test showed that female yogis (M = 5.53; SD = 1.58) had significantly higher body awareness of the weather change response when compared to female vol-

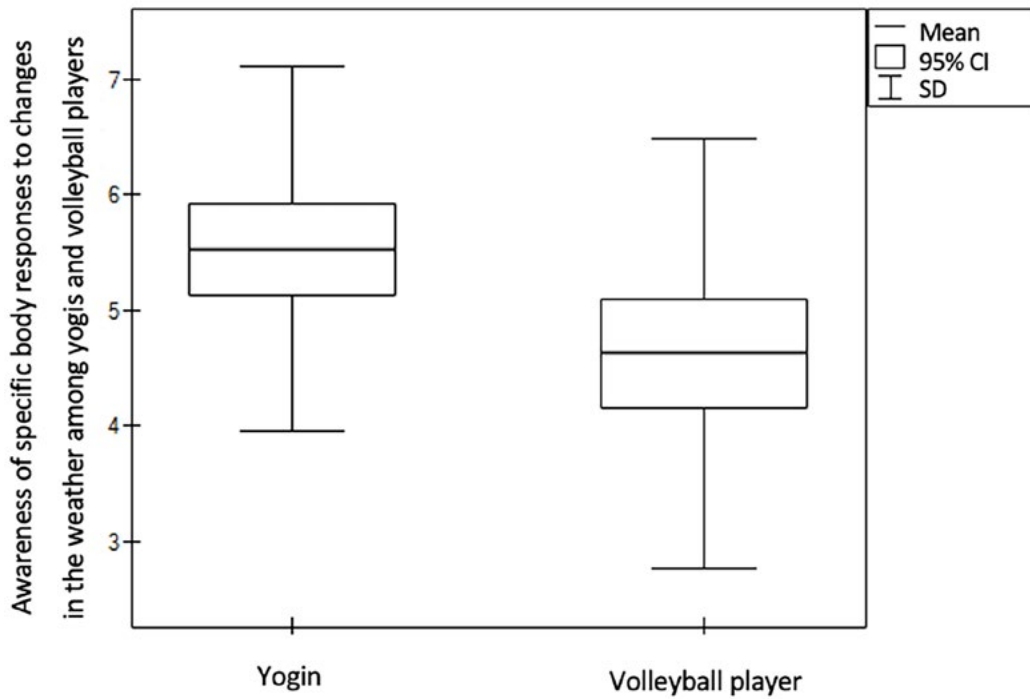
leyball players (M = 4.63; SD = 1.86), U = 1450; p = 0.004. The strength of the observed effect appeared to be moderate (Cohen's d = 0.52). The lack of normality of the differences' distribution was confirmed by the Shapiro-Wilk test (p < 0.001). Using Leven's test, we also confirmed that the variances of the compared groups were not equal (p = 0.033).

The Student's t-test indicated that female yoga practitioners (M = 5.44; SD = 1.74) could better predict how much sleep they needed to wake up rested when compared to female volleyball players (M = 4.78; SD = 1.95), t (126) = 2.0079; p = 0.047. The strength of the observed effect was found to be low (Cohen's d = 0.36). The lack of normality of the differences' distribution was demonstrated by the Shapiro-Wilk test (p < 0.001). However, the large study group (>100) allowed for the use of a parametric Student's t-test. Equality of variance of the compared groups was demonstrated by Leven's test (p = 0.235).



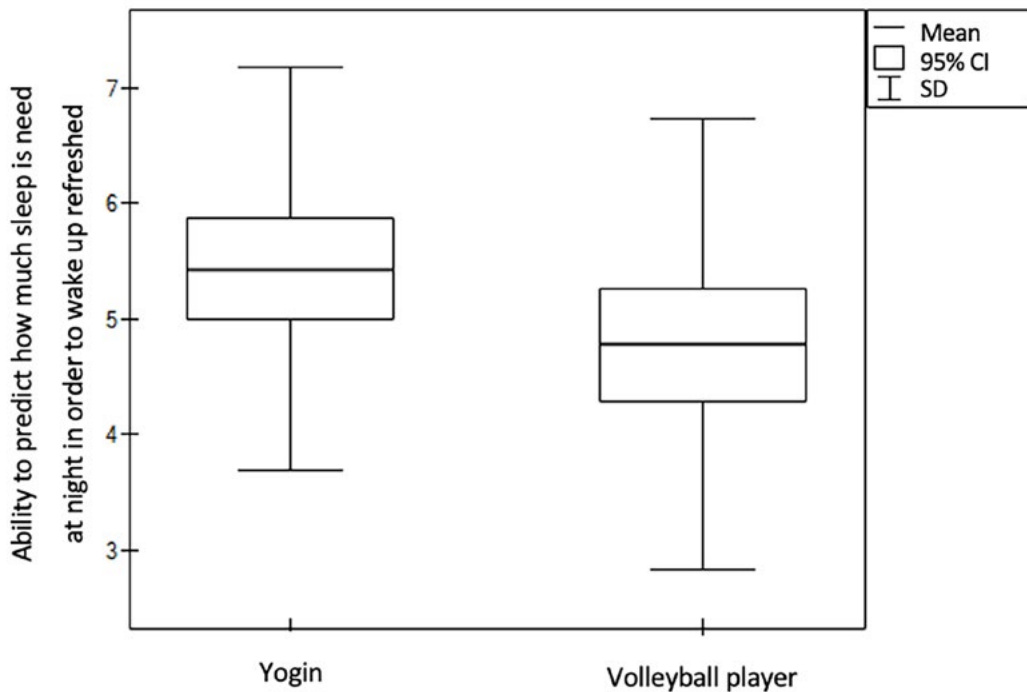
**Figure 1.** Tend not to notice physical tension or discomfort until they really grab attention among female yogis and volleyball players.

**Source:** Own materials based on the conducted research.



**Figure 2.** Awareness of specific body responses to changes in the weather among yogis and volleyball players.

**Source:** Own materials based on the conducted research.



**Figure 3.** Ability to predict how much sleep is needed at night in order to wake up refreshed among yogis and volleyball players.

**Source:** Own materials based on the conducted research.



### Statistically significant results

(1) Ignoring feelings of physical tension or discomfort until they start to bother you: female yoga practitioners ( $M = 3.91$ ;  $SD = 1.61$ ), female volleyball players ( $M = 2.97$ ;  $SD = 1.37$ ),  $U = 1379$ ;  $p = 0.001$ ; (2) paying attention to how the body responds to changes in weather: female yogis ( $M = 5.53$   $SD = 1.58$ ), female volleyball players ( $M = 4.63$ ;  $SD = 1.86$ ),  $U = 1450$ ;  $p = 0.004$ ; (3) being able to predict how much sleep is needed to wake up rested: female yogis ( $M = 5.44$ ;  $SD = 1.74$ ), female volleyball players ( $M = 4.78$ ;  $SD = 1.95$ );  $t(126) = 2.0079$ ;  $p = 0.047$ .

### Discussion

Analysis of the results obtained from the questionnaires and the open-ended questions showed greater body awareness in female yoga practitioners. In particular, differences were shown in ignoring the physical discomfort and tension, paying attention to the body's response to weather changes, and determining the appropriate amount of sleep.

In the first open-ended question, "What is the body to you?" almost all yoga practitioners described the body as an element of wholeness. For yogis, the body, along with the soul, is an integral whole; they pay attention to both physical and mental health. Mahlo and Tiggemann [16] tested this idea among yoga practitioners and found that through participation in this activity an enhanced embodiment process and a reduction in self-objectification occurred; this may explain why yogis, for the most part, did not choose the definition of "work tool" as did  $\frac{1}{4}$  volleyball players. Women volleyball players may perceive their bodies as an instrument used to achieve goals, providing opportunities but also limitations in the form of injury or illness. Female athletes also provided "business card" responses, which may be related to a sense of obligation to maintain healthy body weight, athletic physique, and concern for image [17].

This supports the hypothesis that volleyball players treat their bodies instrumentally, and yogis recognise the body as a psychosomatic unity. The question about the definition of self-awareness

shows a greater attachment of yoga practitioners to being attentive to experienced sensations and emotions in the present moment. Slightly over half of the female volleyball players also referred to this category. However, a considerable group also interpreted self-awareness as knowledge about oneself, which includes being aware of one's abilities and limitations. The result obtained can be related to how volleyball players define their body as a working tool that determines an athlete's skill.

When asked about their well-developed areas of self-awareness, female yoga practitioners mostly listed factors related to registering a physical or emotional state, which can be interpreted as a result of practising yoga and understanding the concept of self-awareness as experiencing oneself. The volleyball players mainly referred to concentration. It should be assumed that it is essential in volleyball for adequate reaction time and focus on the task. Athletes are constantly challenged to make quick, correct decisions and control their emotions [14]. With mindfulness, athletes can gain the ability to direct and pay attention to what is important at a given time to complete a task [18]. There were also references to goal-oriented skills in the volleyball players' responses. This is understandable in a sports environment where there is an element of competition and improvement in physical performance.

Nearly half of female yogis (46%) admit to developing their self-awareness through mental practices such as meditation, breath training, and mindfulness techniques, while only 17% of female volleyball players reported performing such practices. This may be the reason for less interest in body awareness on the part of volleyball players and more willingness on the part of female yoga practitioners to delve into the art of yoga and try other yoga-themed activities. Learning about self-awareness and participating in psychotherapy were mentioned by a similar number of participants in both groups, with a slight advantage for yogis, which can also be explained by a greater interest in the field. The "sport" category was mentioned by a greater number of female volleyball

players when compared to female yoga practitioners. Athletes are usually exposed to many other activities before specialising in a discipline. Volleyball players, in addition, were much more likely to report that they had not previously developed body awareness. Developing a sense of self has only been gaining popularity in the last few years, especially in a sports environment; hence, there may be a considerable discrepancy in results between groups.

When asked to list the areas in which the participants believe they have low self-awareness, individuals in both groups most often mentioned registering their physical and emotional state with an advantage for the yogis. While the question about areas with good self-awareness was dominated by responses about the ability to register internal physical sensations and knowing one's needs, the question about low self-awareness included difficulties in relationships and managing unwanted emotions. Female volleyball players mentioned goal orientation more often; however, the difference was not great (female yogis - 19%, female volleyball players - 29%). It is interesting to note that both groups mention nutrition as a low area of self-awareness. Usually, the reason for choosing this category was a lack of motivation to start eating healthy or a weakness for sweets.

The majority of respondents in both groups expressed a desire to work on their self-awareness through mental practices (53% - yogis, 29% - volleyball players), psychotherapy, and education, but yoga practitioners mentioned it more often. More often than not, volleyball players did not know how they could develop self-awareness. This is probably due to little knowledge, in the sports community, about working with your body, your emotions and your thoughts. The same amount (26%) would not want to spend time developing body awareness for volleyball players. In female yogis, this answer was given by 15% of the respondents, which may be due to treating yoga as a way to do one of many activities during leisure time, and it is not a priority for them.

Referring to the results obtained from the MAAS and BAQ questionnaires, we again found that the

registering sensations coming from the body and the sense of "here and now" is better formed in yoga practitioners when compared to professional athletes. The mean scores of the female yogis obtained with the MAAS tool slightly outweighed those of the female volleyball players; however, the former performed much better on the BAQ questionnaire. Given that the BAQ is based on registering body signals unrelated to emotions, it can be concluded that yoga affects brain structures that are involved in attention, stimulation, or autonomic control more than sports do. Research that measured body awareness in basketball players, swimmers, soccer players, and handball players [19]. The volleyball players performed significantly better on the aforementioned tests. The mean score for the previously mentioned athletes was  $M = 83.3$ , while for the female volleyball players, it was  $M = 86.8$ . The difference may be due to the need for quick reaction time and a specific concentration-time during the action, which on average lasts between 11 and 20 seconds during a volleyball match [20]. Rivest-Gadbois et al. [21] suggested that the activation observed in limbic areas during yoga and meditation most likely modulates the output of the autonomic system. Several other studies have examined the effects of integrative mind-body training, a technique similar to yoga that includes relaxation, motor imagery, mindfulness of brain structures and physiological processes, especially the autonomic nervous system [22,23].

Female volleyball players are noticeably more likely to ignore feelings of physical tension or discomfort when compared to female yoga practitioners. The result was statistically significant: female yogis ( $M = 3.91$ ;  $SD = 1.61$ ), female volleyball players ( $M = 2.97$ ;  $SD = 1.37$ ) ( $p = 0.001$ ). Studies addressing the issue of athletes and pain indicate that athletes have a higher pain tolerance when compared to non-athletes [24]. In addition, athletes respond adaptively to pain (e.g., coping strategies, seeking support), while they are less likely to try to avoid pain when compared to the non-athlete group [25]. In their research, Thomas Derroche et al. [26] examined athletes' propensity to

continue playing despite the pain and looked for a factor correlated with coping strategies. It appears that society views the acceptance of pain as an inherent part of the game [27]. On the other hand, yoga follows the ideology of cessation of action when it comes to experiencing painful or unpleasant sensations. Practising yoga does not indicate pushing through and crossing the line of pain. Conversely, it encourages cautious transgression of existing movement limitations over time if they do not cause discomfort [28].

Based on other selected results from the MAAS questionnaire, it can be concluded that female yogis had a lower tendency to lose touch with the present and were less preoccupied with past and future time. It is related to the principle of yogic lifestyle, which is based on analysing one's state in the present time. Learning to monitor experience with acceptance of currently occurring inner sensations is an emotion regulation skill learned through mindfulness practice. Yoga effectively immunises against stress and teaches how to cope with it. Moreover, these activities reduce the negative impact of stress on the risk of related diseases [29]. On the other hand, professional sports expose athletes to prolonged stress and are not conducive to experiencing life on a here-and-now basis. There is an uncertainty regarding finances, concerns about the future outside of sports, and numerous demands from coaches and families that lead to preoccupation with the future [30]. Therefore, unlike yoga practitioners, volleyball players are more focused on the task at hand.

At the end of the MAAS questionnaire, a statement about snacking was included, with no particular attention paid to the process of eating. Volleyball players in this subsection show a greater tendency to treat the analysis of the eating process as unimportant and are probably more likely to engage in other activities on occasion. This may be due to not having consistent times set for meals and not paying as much attention to the essence of nutrition as yoga practitioners do.

The study results indicate that volleyball players are more sensitive and attentive to pain due to fear of injury. Of the several explanations proposed by researchers for the differences found in pain tolerance between athletes and non-athletes, one is that athletes evaluate pain sensations differently [31]. No doubt, playing sports professionally leads to a higher tolerance for these types of feelings. However, based on the result of one of the phrases from the BAQ questionnaire - "I can tell in what situation I got hit, even if I don't have a bruise afterwards", one might be drawn to conclude that athletes show more sensitivity to pain because it can exclude an athlete from playing sports. In female yoga practitioners, this phenomenon occurs in the vast minority, as mental practices engage many brain mechanisms that alter the construct of subjectively experienced pain, thereby causing a reduction in the sensitivity of the structures responsible for its sensation [32]. Other studies have reported that yoga weakens the threat signal after experiencing pain and reduces anxiety [33].

Practising mindfulness in yoga also promotes the development of interoceptive sensing, which may indicate that yogis are much more sensitive to atmospheric changes, feeling body temperature and detecting impending illness [32]. On the other hand, Volleyball players register much later what is associated with fatigue, illness, and excessive cravings. In addition to less interest in mental practices, the reason may be the tendency for female athletes to ignore undesirable feelings all too often. It is difficult to say conclusively, but volleyball players may be more sensitive to mechanical injury than fatigue, weakness due to inadequate recovery, or starvation. The difference proved to be statistically significant.

In addition to focusing on the processes within the body, the style of being in yoga should follow the natural rhythms of life. Therefore, an important element in practising yoga is considering the regular rhythm of the day and the cycle [38]. Mindfulness-based yoga involves cognitive beha-

viours and intrapsychic processes that influence arousal and reactivity in ways that improve sleep, daytime functioning, and perceptions of sleep and wake time [34]. This is probably why the results are so different compared to the responses from female volleyball players. Yogis are better at determining the appropriate time for sleep. It is worth mentioning the observations made by Kasiganesan Harinath et al. [35], which suggested that yoga practices can be used as psychophysiological stimuli to increase endogenous melatonin production, which in turn may be responsible for improving mood. According to Michal Karasek [36], melatonin enhances many biological rhythms, e.g., wake-sleep rhythm and body temperature. The results in this question showed statistical significance.

The issues presented in this paper have not been completely explored. A further direction for the study would be more carefully selected in terms of the characteristics of the study material, as there was no careful selection of female study participants regarding age or seniority in yoga or volleyball. This can significantly affect the answers given to individual questions. In addition, a deeper analysis of, for example, the degree of ability to register specific needs, physiological sensations, and emotions in open-ended questions from the first part of the survey was indicated.

## Conclusion

Upon completion of the study, the following hypotheses were supported: (1) Yogi's record body signals in the present moment. (2) Female volleyball players are more likely to ignore body sensations related to fatigue, tension pain, while female yoga practitioners register them more. The result was statistically significant. (3) Female volleyball players are more likely to ignore negative body stimuli. (4) Yoga practitioners focus more on the body sensations felt in the present moment. (5) Female volleyball players are more likely to treat their bodies instrumentally, while female yogis mostly consider their bodies as a home for the soul and a psychosomatic unity. (6) Female volleyball players were more likely to include self-awareness parameters related to goal orientation and less likely to include nutrition and mindfulness. (7) Yogis are more likely to associate self-awareness with the concept of mindfulness than with knowing oneself. (8) Yoga practitioners are more likely to develop self-awareness than volleyball players. (9) Female volleyball players are more likely to not know how they could develop self-awareness when compared to female yogis.

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