

PART III. OTHER  
DZIAŁ III. RÓŻNE

TYPE D PERSONALITY AND SENSE OF COHERENCE AMONG FEMALE POLISH  
NATIONAL SOCCER PLAYERS

OSOBOWOŚĆ TYPU D A POCZUCIE KOHERENCJI REPREZENTANTEK POLSKI  
W PIŁCE NOŻNEJ

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A. Study design/planning  
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B. Data collection/entry  
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C. Data analysis/statistics  
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Summary

**Background.** The popularity of soccer, including women's soccer, continues to grow. The training of females requires the development of standards different from those in men's soccer. Professionalization is necessary, including adequate mental preparation.

**Material and methods.** A total of 35 female Polish national soccer players participated in the study. This study used Polish versions of two standardized questionnaires (DS14, SOC-29), and a questionnaire developed by the authors. The authors evaluated type D personalities and their correlations with psychological resources or the ability to manage them, i.e., with the sense of coherence.

**Results.** The obtained results, when compared to the results of standardization studies, are at the average level. Moreover, the detailed analysis of negative emotionality (NE) and social inhibition (SI) indices allowed us to identify type D personalities in 7 (20%) out of 35 subjects. These individuals scored more than 10 points on each of these scales.

**Conclusions.** The analyses have given rise to some alarming conclusions. One in five female Polish national soccer players has a type D personality. Female players with this diagnosis have a significantly lower sense of coherence. Moreover, it has been proven that there is a significant correlation between sense of coherence and the dimensions of type D personalities. These results suggest that interventions as well as educational measures to strengthen one's psychological resources and improve one's coping with difficult situations or stress should be taken.

**Keywords:** women's soccer, type D personality, sense of coherence, soccer, football

Streszczenie

**Wprowadzenie.** Nieustająco wzrasta popularność piłki nożnej – również żeńskiej piłki nożnej. Szkolenie dziewcząt/kobiet wymaga opracowania standardów różnych od tych obowiązujących w męskiej piłce nożnej. Konieczna jest profesjonalizacja, uwzględniając również przygotowanie mentalne.

**Materiał i metody.** W badaniu wzięło udział 35 zawodniczek, reprezentantek Polski w piłce nożnej. W badaniu wykorzystano polskie adaptacje dwóch standaryzowanych kwestionariuszy (DS14, SOC-29) oraz autorski kwestionariusz ankiety. Analizowano osobowość typu D i jej związki z zasobami psychologicznymi czy umiejętnością zarządzania nimi, czyli z poczuciem koherencji.

**Wyniki.** Uzyskane wyniki, w odniesieniu do wyników badań normalizacyjnych, są na poziomie wyników przeciętnych. Ponadto szczegółowa analiza wartości wskaźników negatywnej emocjonalności (NE) i hamowania społecznego (HS) pozwala zdiagnozować u 7 (20%) spośród 35 badanych osobowość typu D. Osoby te na każdej ze skal uzyskały wyniki powyżej 10 punktów.

**Wnioski.** Analizy stały się podstawą sformułowania alarmujących wniosków. Co piąta reprezentantka Polski w piłce nożnej ma osobowość typu D. Zawodniczki z taką diagnozą mają istotnie niższe poczucie koherencji. Ponadto udowodniono, że istnieje istotny związek między poziomem poczucia koherencji a wymiarami osobowości typu D. Takie wyniki sugerują podjęcie działań interwencyjnych, a także edukacyjnych na rzecz wzmocnienia zasobów psychologicznych i doskonalenia procesu radzenia sobie z sytuacjami trudnymi lub stresem.

**Słowa kluczowe:** piłka nożna kobiet, osobowość typu D, poczucie koherencji, piłka nożna

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## Introduction

The issue of women participating in sports is complex. This is especially true when female athletes play sports that are stereotypically considered male; soccer is one example. The popularity of women's soccer has been growing intensely. Interdisciplinary, scientific research and ongoing discussions, at the international and intercultural levels, need to continue. It is important to understand the specifics of women's soccer in order to create training systems that support the holistic development of players. It is important to identify existing problems and create alternative solutions for them. Smart professionalization is needed. It is necessary to create soccer standards dedicated to women, rather than drawing them from the traditions and achievements of men's soccer [1-6]. This applies to the psychological sphere of female athletes. The results of psychological analyses can be useful for developing clues relevant to the mental preparation processes of female soccer players [7-11].

In the context of these considerations, it is important to analyze type D personalities and its two associated dimensions, negative emotionality (NE) and social inhibition (SI). NE is the tendency to experience strong negative emotions (fear, hostility, anger). This is accompanied by a catastrophic perception of the world, a sense of danger, and tension. The higher the NE the lower one will view their life satisfaction. In contrast, SI involves consciously refraining from expressing negative emotions in social situations. It generally stems from a fear of disapproval from others. This results in greater isolation, an inability to make social connections, and inadequate uses of one's social supports. SI is associated with low self-esteem and feelings of fatigue. A type D personality is also a risk factor for various somatic diseases. It has been associated with deficits in the possession and/or ability to use psychological resources. In summary, the functioning of a person with this personality consists of three components: cognitive (pessimistic perception and interpretation of information in terms of threat), emotional (experiencing negative emotions), and behavioral (inhibiting the expression of emotions) aspects [12-16].

It appears that a type D personality and its dimensions may correspond with a low sense of coherence. The literature describes a tripartite view of coherence and relates its dimensions to attitudinal components, especially the individual's attitude toward stressors (sense of comprehensibility as a cognitive component, sense of manageability as a behavioral component, and sense of meaningfulness as an emotional-motivational component) [17]. The construct of coherence fits with the idea of a salutogenic concept. It suggests psychological resources, or more precisely, the ability to manage them as potentials of health. It represents a relatively enduring, dominant, and global life orientation that allows for specific perceptions of stressful situations or stimuli and responses to them by coping with the stress. It facilitates adaptive coping in difficult situations and thus benefits one's overall health. This is determined by the three components of coherence: 1. Comprehensibility — the tendency to perceive information external and internal to the individual as cognitively meaningful, coherent, orderly, predictable, or explainable; 2. Manageability — the tendency to perceive the individual's possessed and other available resources sufficient to meet the demands of the external and internal world; 3. Meaningfulness — the tendency to perceive the meaning of life and actions, commitment, and effort to confront demands as challenges [18-20].

The aim of this study is to analyze specific dimensions of a type D personality, sense of coherence, and correlations between the different dimensions. The importance of these variables on quality of life, as well as the lack of similar reports in the literature, justify this study.

## Material and methods

This study involved 35 female national soccer players, including 13 representatives from the senior women's national team and 22 players from the U-19 national team. The subjects ranged from 17-32 years old ( $M=20.71$ ,  $SD=4.18$ ). They have played soccer for no less than 5 years but no more than 18 years ( $M=10.77$ ,  $SD=2.57$ ). The majority, 28 female soccer players (80%), stated that they want to play soccer professionally. Seven respondents would like to train at the amateur/recreational level in the future. Two of them reported that they do not expect to continue their athletic careers in the future.

Three tools were used throughout the study:

- a survey questionnaire (the authors' elaboration) containing, among other things, questions concerning the age of the examined female athlete, the length of their training experience, and their plans concerning sports training;
- the Polish adaptation of Denollet's Type D Scale (DS14) which allows for the identification of individuals with a type D personality and diagnoses their tendency to experience NE and to refrain from expressing these emotions and accompanying behaviors (SI) [16];

- the Polish adaptation of the SOC-29 Orientation to Life questionnaire was used to diagnose the general level of coherence as well as each participant's comprehensibility, manageability, and meaningfulness using scales [18,21].

These tools are recognized, widely used psychological tests that meet the high standards of research. Each athlete individually and independently completed a paper version of the questionnaires.

## Results

The results obtained from the questionnaires are shown in Table 1. Relating them to the results of standardized studies concluded that they are of average results. Moreover, a detailed analysis of the NE and SI indices allowed us to diagnose type D personalities in seven (20%) of the 35 subjects. These individuals scored more than 10 points on each of these scales.

**Table 1.** Questionnaire survey results (N=35)

Tool	Scale	Range	M ± SE
DS14	NE	1-23	8.48±5.53
	SI	1-20	7.86±4.68
SOC-29	C	33-57	43.91±7.02
	Ma	37-67	49.06±7.33
	Me	32-56	46.23±5.52
	SOC	108-180	139.20±16.82

Notes: NE — negative emotionality, SI — social inhibition, C — comprehensibility, Ma — manageability, Me — sense of meaningfulness, SOC — global index of sense of coherence.

On a purposive selection basis, seven individuals who scored the lowest on NE and SI were chosen (these scores were less than 5 on each scale). These individuals composed a comparison group. This made it possible to compare the mean coherence levels of female athletes between these two groups. The results of the comparisons are presented in Table 2.

**Table 2.** Intergroup comparisons of sense of coherence

Tool	Scale	Individuals diagnosed with type D personality (N=7)	Individuals with the lowest scores related to type D personality dimensions (N=7)	Mann-Whitney U value
		M ± SE	M ± SE	
SOC-29	C	38.86±3.89	51.86±4.84	1.00**
	Ma	40.57±2.51	55.57±7.41	1.00**
	Me	43.28±6.90	51.00±5.07	8.50*
	SOC	122.71±9.27	158.43±15.09	1.00**

Notes: NE — negative emotionality, SI — social inhibition, C — comprehensibility, Ma — manageability, Me — sense of meaningfulness, SOC — global index of sense of coherence; \*\*  $p \leq 0.01$ ; \*  $p \leq 0.05$ .

Female athletes diagnosed with type D personalities have significantly lower levels of coherence. This applies to the general level and sense of comprehensibility, manageability, and meaningfulness. In addition, considering the results of the entire study group of female soccer players, an analysis of correlations between type D personality dimensions and the dimensions of coherence was conducted.

The values of the correlation coefficients are presented in Table 3 and allow us to conclude that the correlation for all analyzed pairs is significant and negative (results are written in bold). A female soccer player's NE and SI are related to their sense of coherence (including a sense of comprehensibility, manageability, and meaningfulness). The higher the indicators supporting a type D personality, the lower the sense of coherence. On the other hand, the intercorrelations of scores obtained using scaled scores from a specific tool were also significant but positive.

**Table 3.** Correlations (Spearman) of the analyzed personality dimensions and sense of coherence (N=35)

Tool		DS14			SOC-29		
		NH	SI	C	Me	Ma	SOC
DS14	NE						
	SI	0.55**					
SOC-29	C	-0.57**	-0.52**				
	Ma	-0.56**	-0.62**	0.53**			
	Me	-0.44**	-0.36*	0.50**	0.54**		
	SOC	-0.65**	-0.61**	0.80**	0.87**	0.76**	

Notes: NE — negative emotionality, SI — social inhibition, C — comprehensibility, Ma — manageability, Me — sense of meaningfulness, SOC — global index of sense of coherence; \*\* $p \leq 0.01$ ; \* $p \leq 0.05$ .

## Discussion

Here, we found a correlation between a sense of coherence and the dimensions of a type D personality. Seven female soccer players (20%) diagnosed with a type D personality had a significantly lower sense of coherence (in each of the measured dimensions), and therefore lower psychological resources (ability to manage them) necessary to cope with stress. Such results are supported in the literature and allow for a more complete characterization [12-16,18,22]. However, these results are alarming. One in five (20%) female soccer players (athletes representing the highest level of the sport) do not cope with difficult situations or experiences and do not express their negative emotions in a healthy manner (for various reasons). They tend to be pessimistic and see reality in terms of danger and worry. In addition, each of these subjects is at risk of developing a number of different health conditions (mental health disorders, cardiovascular disease, cancer, ulcers, and skin diseases), as well as fatigue and, in a sense, job burnout. Female athletes with type D personalities were simultaneously diagnosed with higher levels of NE and SI. It should be noted that the study group included female athletes who had elevated scores on one of these scales. Unfortunately, in addition to relating the means determined from our study to those presented in the literature, there is no clear interpretive rationale for the results of both the DS14 Scale and the SOC-29 Questionnaire. Thus, it is worthwhile to conduct further research in the field of sports and create standards for these groups of athletes.

Our results demonstrate that interventions, education, and even therapy are needed. It is necessary to learn a more effective process for the regulation of emotions, including arousing positive emotions and lowering negative ones, identifying sources and opportunities for social support and using them effectively, and improving emotional intelligence and other social competencies helpful in understanding and appropriately using one's knowledge about emotions. Such a conclusion aligns with the training needs of female soccer players diagnosed in other studies [11]. It is reasonable, especially at the level of youth sports, to cooperate with the family of athletes in these activities [23]. It is also worthwhile to include outreach activities focused on health behaviors and their importance to more holistically treat overall health. Strengthening coherence will influence a greater awareness of responsibility and actions for personal health, and the belief that it can be influenced. Type D personalities, as well as a sense of coherence, are relatively fixed dimensions. However, as the authors state, it is possible to work on them, at least to some extent. Health potentials (healthy aspects of personality, opposite to type D personality) should be strengthened and taught on how to manage them optimally, i.e., to improve one's sense of coherence [16,18,24]. This study should be a valuable hint for the players themselves, but also for coaches and sport psychologists responsible for the planning and implementation of mental training programs dedicated to female soccer players.

The Polish tools (DS14 and SOC-29) were developed in a way that allows them to be considered similar to their original versions [12,16,25,26]. The results of the SOC-29 Questionnaire are independent of cross-cultural differences [21]. This is important information, especially in the context of the need for more extensive international research as cited at the beginning of this article. This study provides an opportunity to make valid intergroup comparisons and may also prove helpful in evaluating the results of longitudinal studies. Such research, especially when interventions and education are included, is advisable and will allow for more accurate monitoring and evaluation of progress.

The specificity of women's soccer and its confrontation with the capabilities and expectations of adepts causes a noticeable percentage of girls to give up sports [27,28]. In the study group, five athletes want to continue training at the amateur/recreational level and two athletes plan to suspend their careers. The analysis of our

results show that among the seven (20%) female athletes with type D personalities, five declared their desire to continue their sporting career at the professional level and two want to practice the sport as an amateur or recreationally in the future. Individuals with type D personalities are not more likely to give up their athletic careers. Nevertheless, strengthening their psychological resources will help them to better find themselves in the sporting reality, make more conscious decisions regarding their life plans, as well as cope more effectively in the areas of other/non-sporting activities (personal, family, and professional).

The authors are aware of the limitations of this study. A relatively small sample was examined. It is worth noting, however, that from the perspective of the authors' intentions to analyze sense of coherence and type D personalities in a group of highly skilled female athletes, inviting as many as 35 female athletes to participate in an individual study provides optimal results. The small group comparisons presented in this paper are a pilot study and an attempt to identify trends rather than provide an assessment of the phenomenon. Our research will continue and the authors will verify the initial hypotheses in a broader research plan.

## Conclusions

Based on these findings we conclude that one in five female Polish national soccer players has a type D personality. These players have a significantly lower overall sense of coherence. This pattern also holds true for each of the three dimensions measured: comprehensibility, manageability, and meaningfulness. Moreover, we also conclude that there is a significant correlation between sense of coherence and the dimensions of a type D personality.

There is an urgent need for psychological interventions as well as educational activities to strengthen psychological resources and improve the process of coping with difficult situations/stress. This is necessary in the context of taking care of the health of female soccer players and their quality of life in a broad (not only sports) dimension. It is also necessary to continue this research and improve tools (DS14 Scale and SOC-29 Questionnaire) to develop norms that can be useful in the process of diagnosing and improving the psychological resources of athletes. This will permit the development of more effective ways to training standards (especially mental training) in various sports, including women's soccer.

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