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Review paper

Changes in the population of people with autism spectrum disorder in Poland between 2012 and 2023

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ABSTRACT

Introduction: In Poland the largest group among the respondents are young people – up to 24 years of age, accounting for over 70% of the diagnosed population of Poles with autism spectrum disorder (ASD).

Aim: To present the changes taking place in the population of people with ASD in Poland in the years 2012–2023 and to present the current epidemiological situation of ASD in Poland.

Material and methods: Desk research was used. Four research questions were posed, to which answers were obtained in the data analysis process.

Results and discussion: Estimating the ASD population in Poland is essential for planning healthcare, education, and social services. In the 2022/2023 school year, 82,199 children had special education needs due to ASD – a 30% increase from the previous year.

Conclusions: The rise in diagnoses (from 18,924 to 131,440) may reflect both a real increase and better diagnostics and awareness. The declining male-to-female ratio (from 4.56 in 2012 to 2.99 in 2023) suggests improved recognition of ASD in females. The biggest increases are among children and youth, highlighting the need for early diagnosis and school support. Regional differences, such as over 1000% increases in some provinces.

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1. INTRODUCTION

The first epidemiological studies on autism spectrum disorder (ASD) were conducted in the 1960s. In the 1970s, 2 to 4 cases of ASD per 1,000 children were identified in Europe and the United States.[1] According to the latest reports published by the Centres for Disease Control and Prevention (CDC), the prevalence of ASD in the USA has risen sharply to 1 in 68 children.[2] Since 2012, many studies have been published indicating the global prevalence of ASD, which varies within and between provinces, with a prevalence rate of 100 cases per 10,000 population. The male to female population ratio is 4.2.[3] Raising awareness of ASD and differences in diagnostic criteria are probably the two main reasons for the so-called ASD epidemic occurrence.[4–6] In Poland, ASD has been diagnosed by specialists for about 30 years. This means that the largest group among the respondents are young people – up to 24 years of age, accounting for over 70% of the diagnosed population of Poles with ASD.[7,8]

2. AIM

The purpose of this article is to present the changes taking place in the population of people with ASD in Poland in the years 2012–2023 and to present the current epidemiological situation of ASD in Poland.

3. MATERIAL AND METHODS

The data was collected and analysed. Desk research was used based on the analysis of detailed data provided by the both Ministry of Health and the National Health Fund of Poland, as well as data collected from journal articles based on the Ebsco and PubMed databases. Four research questions were posed, to which answers were obtained in the data analysis process:
1. How does the population of people with ASD in Poland change between 2012 and 2023?
2. What is the ratio of the female to male autism population between 2012 and 2023 in Poland?
3. How do populations of people with ASD in Poland vary depending on developmental age?
4. What is the distribution of the population of people with ASD in Poland in particular provinces?

4. RESULTS

4.1. How does the population of people with ASD in Poland change between 2012 and 2023?

The population of people with ASD in Poland has been growing significantly. The largest increase is observed after 2019, which may partly reflect changes related to the COVID pandemic (2020) and subsequent organisational changes in the healthcare system. This is confirmed by the

Table 1. Number of patients treated with diagnosis vs recorded incidence in Poland between 2012 and 2023.

Year	Number of patients treated		Recorded incidence
	with primary diagnosis or with comorbidity diagnosis	with primary diagnosis	
2012	13 361	12 675	18 924
2013	16 758	15 821	23 972
2014	20 719	19 322	29 476
2015	24 929	23 233	35 651
2016	29 071	26 691	42 191
2017	33 259	30 561	48 818
2018	38 655	35 133	56 223
2019	45 287	40 421	65 693
2020	47 657	42 310	72 944
2021	61 030	53 517	86 590
2022	75 932	65 113	104 790
2023	95 422	79 775	131 440

data showing a steady increase in the number of patients who received ASD-related treatment (Table 1). This is noticeable in both categories of patients: patients with ASD as a primary diagnosis or with comorbidity diagnosis as well as in patients with ASD as a primary diagnosis only.

4.2. What is the ratio of the female to male autism population between 2012 and 2023 in Poland?

The trend shows a steady increase in the proportion of women in the diagnosed population. This may be a sign of improved diagnostic methods and greater awareness of the specific characteristics of ASD in women. It can be seen that in 2012 there were almost 5 diagnosed men for 1 diagnosed woman with ASD, while in 2023 this ratio decreased to less than 3 : 1 (Table 2). This reflects a clear change in the re-

Table 2. Yearly gender-based incidence of diagnosed cases in Poland (2012–2023).

Year	Registered incidence in		Female to male ratio	Number of male patients diagnosed for 1 diagnosed woman
	women	men		
2012	3402	15521	2 : 9	4.56
2013	4326	19645	2 : 9	4.54
2014	5298	24178	2 : 9	4,56
2015	6474	24178	1 : 4	3.73
2016	7765	34426	2 : 9	4.43
2017	9141	39675	2 : 9	4.34
2018	10709	45511	1 : 4	4.25
2019	12914	52774	1 : 4	4.09
2020	14840	58100	1 : 4	3.92
2021	18750	67836	2 : 7	3.62
2022	24523	80267	1 : 3	3.27
2023	32936	98504	1 : 3	2.99

Table 3. Distribution of diagnosed cases across age and gender (2012–2023).

Year	0–6 years old		7–11 years old		12–17 years old		18–34 years old		35 and older	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
2012	1262	5257	967	5296	675	3427	431	1453	67	88
2013	1595	6369	1284	6830	856	4412	508	1915	83	119
2014	1860	7516	1646	8435	1096	5613	613	2474	83	140
2015	2165	8719	2095	10288	1369	7005	750	2998	95	167
2016	2421	9486	2567	12494	1754	8617	907	3633	116	196
2017	2617	10293	3131	14573	2173	10223	1077	4340	143	246
2018	2968	11258	3534	16435	2713	12250	1310	5251	184	317
2019	3376	12351	4156	18923	3529	14552	1640	6529	213	419
2020	3572	12698	4557	20151	4446	17009	2010	7760	255	482
2021	4413	15156	5372	22354	6087	20396	2575	9327	303	595
2022	5484	18043	6559	25721	8494	24750	3571	11020	405	721
2023	6840	21805	8447	31306	11693	30205	5322	14165	621	1012

corded diagnostic data – a statistically increasing percentage of girls and women are diagnosed with ASD.

4.3. How do populations of people with ASD in Poland vary depending on developmental age?

In all age groups, more men are being diagnosed, with a male to female ratio of around 4 : 1 to 3 : 1. The greatest gender imbalance is seen in the children's groups (0–6 and 7–11 years), but at the same time these groups show a very dynamic increase in the number of diagnoses (Table 3). Increase among young people: since around 2015/2016, there has been a steady increase in diagnoses in the 12–17 age group, which may be due to the intensification of diagnostic measures in the school environment. The least numerous, although also growing, are the adult groups (18–34 and 35+).

4.4. What is the distribution of the population of people with ASD in Poland in particular provinces?

It can be observed that the number of patients with ASD in Poland is systematically increasing across all voivodeships (Figure 1).

In the early years, we observe figures ranging from several hundred to a few thousand patients in individual voivodeships (Figure 2), whereas by 2023, these numbers often reach several thousand (e.g., in the Mazowieckie voivodeship, over 20,000) (Figure 3).This may be due to an actual increase in the number of people with ASD, as well as better access to diagnostics and greater social and medical awareness.
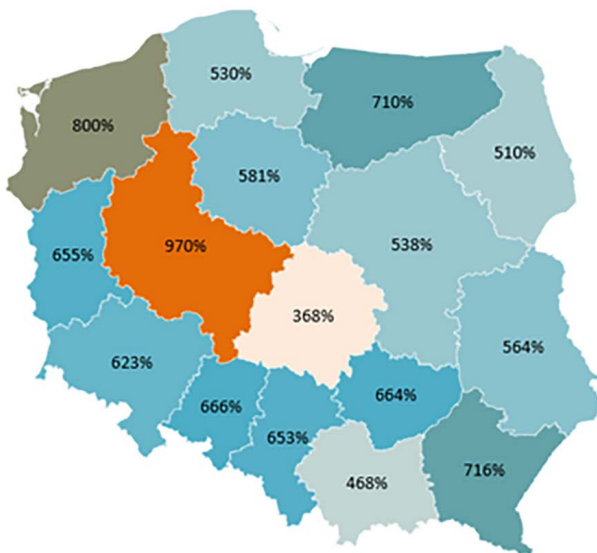

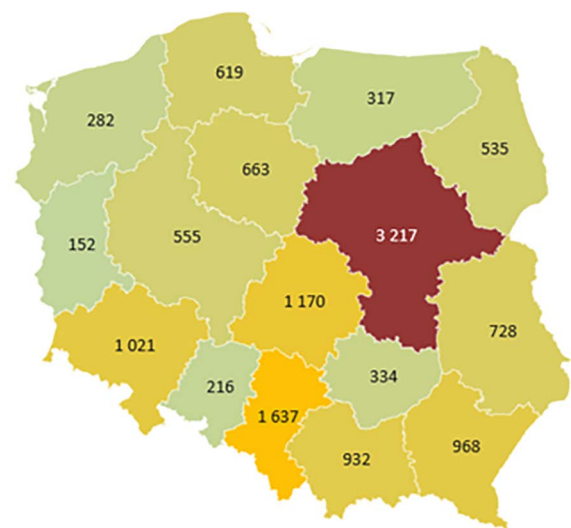**Figure 1. Increase in registered incidence in years 2012–2023.**

Figure 2. Number of patienst with ASD diagnosis or co-morbidity diagnosis in 2012.
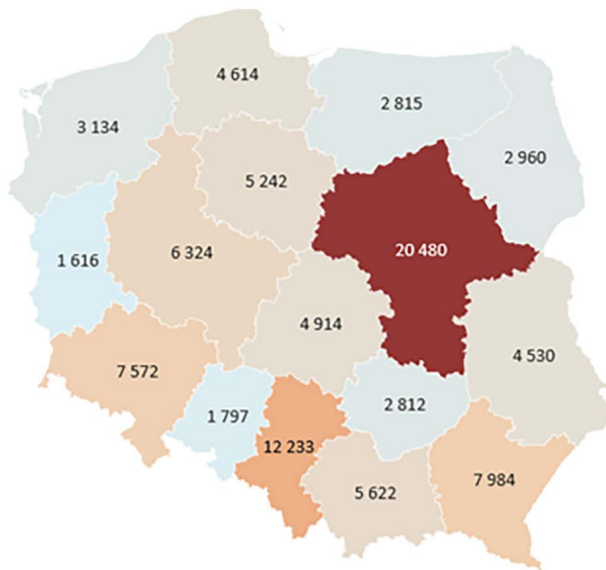
Figure 3. Number of patienst with ASD diagnosis or comorbidity diagnosis in 2023.

5. DISCUSSION

Research into the epidemiology of ASD has been conducted worldwide since the 1990s. The population of people with ASD is constantly increasing. Howlin and Moore show regional differences in population size in a study of the British population,[9] which is similarly clearly indicated in the research carried out in Poland.[6] The discrepancies in the epidemiological indicators of ASD in Poland and worldwide are probably related to such factors as definitional changes, different databases, cohort sizes, geographical area, and specialist knowledge.[10–13]

Research into population size allows us to estimate how many people in Poland live with ASD, which is crucial for planning medical, educational and social services. According to data from the Ministry of Health and the National Health Fund of Poland, in the 2022/2023 school year, 82,199 children and young people in Poland had a certificate of special educational needs due to ASD, with the number increasing by around 30% year on year.[14] The population data will help to adapt the education system and the labour market to the needs of people with ASD. This, in turn, will significantly improve the living conditions of people with ASD.

6. CONCLUSIONS

1. The increase in the number of diagnoses from 18,924 to 131,440 may reflect both a true rise in ASD cases and improvements in diagnostic processes and public awareness.
2. The rise could also be influenced by excessive diagnostic tendencies.
3. Changes to diagnostic criteria and greater social and medical awareness may contribute to more diagnoses, but this can lead to overdiagnosis, particularly in cases with subtle symptoms.

4. The decreasing male-to-female ratio (from 4.56 in 2012 to 2.99 in 2023) indicates an improvement in the detection of ASD in women, which may have been underestimated in the past.
5. The greatest increases in diagnoses are observed in children and youth, highlighting the need for early diagnosis and support in schools.
6. Regional differences, with an over 1000% increase in Wielkopolskie and Zachodniopomorskie provinces, suggest that local demographic factors and access to specialized diagnostics are crucial.

Conflict of interest

Authors declare no conflicts of interest, financial or otherwise.

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