UNDERSTANDING PUBLIC ATTITUDES TOWARD AUTISM SPECTRUM DISORDER IN THE REPUBLIC OF NORTH MACEDONIA

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Abstract

The concept of inclusion has become increasingly important worldwide, highlighting the need to ensure that every individual, including people with Autism Spectrum Disorder (ASD), has equal rights and opportunities to participate in all aspects of society. Inclusion should not be limited to education but should also encompass employment, independent living and active participation in the community.
Individuals with autism should be given equal opportunities to develop their abilities, pursue education, access employment and build meaningful relationships within their communities. Society has an important role in reducing discrimination, overcoming social and institutional barriers and creating conditions that enable people with autism to achieve greater independencce.
This study aims to assess the attitudes about Autism Spectrum Disorder in the general population. Participants were 100 people of different ages and profiles, who were surveyed electronically using a questionnaire taken from a similar study, which was translated and adapted into Albanian. The study used a quantitative research method, while the data were processed using the SPSS program, using statistical and descriptive analysis, as well as differential and comparative analysis.
We found that the general population has a high level of positive attitudes towards ASD, the female gender has more positive attitudes compared to the male gender, there are no significant differences depending on the age and level of education of the respondents, while statistically significant differences were found between groups of different professions.

Keywords: Inclusion, Autism Spectrum Disorder (ASD), Attitudes.

1. Introduction

Autism is a complex phenomenon that has attracted considerable attention in the fields of scientific research, health, education and social inclusion. Individuals with Autism Spectrum Disorder (ASD) may have different ways of communicating, learning, expressing emotions and forming relationships with others. Due to individual differences in their characteristics and needs, it is important to understand autism beyond clinical descriptions, also taking into account how the social environment affects the lives of these individuals. In this regard, the level of knowledge and attitudes of the public play an important role in the formation of an inclusive society. Correct information, awareness and acceptance of individual differences are essential elements for reducing prejudice, promoting equality and creating conditions for people with autism to have equal opportunities in education, employment and participation in social life.
The purpose of this study is to examine public attitudes in North Macedonia towards autism spectrum disorder, focusing on factors that influence misperceptions and myths that often accompany this disorder. Through this analysis, it is intended to draw recommendations for awareness and education programs that promote a more inclusive and supportive culture for people with autism and their families.

Research questions

1. What is the level of attitudes towards WHA among the general population?
2. What level of attitudes on WHAT do women have compared to men?
3. What level of attitudes on WHAT do people over the age of 32 have compared to those under the age of 32?
4. Are there differences in the level of attitudes towards WHA among the general population depending on their level of education?
5. Are there differences in the level of attitudes towards WHA among the general population depending on their profession?

Hypotheses

1. The level of attitudes of the general population towards Autism Spectrum Disorder (ASD) is average.
2. There are differences in attitudes towards ASD depending on the gender of the respondents.
3. There are differences in attitudes towards ASD depending on the age group of the respondents.
4. There are differences in attitudes towards ASD depending on the level of education of the respondents.
5. There are differences in attitudes towards ASD depending on the profession of the respondents.

Literature review

Common stereotypes and myths about autism spectrum disorder

I. Myth: The emergence of autism is relatively new.
II. Myth: Autism is a mental health disorder.
III. Myth: All individuals with autism have intellectual disabilities.
IV. Myth: Autism is caused by vaccines.
V. Myth: Autism is caused by poor parenting or "refrigerator mothers".
VI. Myth: Autism is caused solely by environmental factors.
VII. Myth: Individuals with autism are violent.

Forms of discrimination against people with autism spectrum disorder

Autistic people may experience loneliness and fewer friendships compared to neurotypical peers, fewer friendships in adolescence compared to peers with other special educational needs, have more difficulties with education and employment, experience poor social integration, and face high rates of bullying. These factors are associated with a reduced quality of life. (Turnock, Langely, & Jones, 2022).
Autistic people encounter negative experiences in their daily lives that are likely to reflect the stigma of autism. For example, neurotypical people are less likely to want to live in the same building as autistic people or spend time together as friends, and are also less likely to want an intimate relationship with an autistic person. At the extreme, autistic people may be dehumanized by neurotypical people. (Turnock, Langely, & Jones, 2022).
Children and adolescents with ASD face increased risks of bullying and social victimization. Studies show that rates of victimization range from 7% to 94%, depending on methodologies

and contexts. Factors contributing to this vulnerability include social and communication challenges, difficulties with theory of mind, and internalizing problems such as anxiety and depression. Adolescents with additional diagnoses, such as ADHD, are at even greater risk (Chiang, 2017).
Workplace harassment, discrimination, and bullying have increased in recent years, and individuals with autism spectrum disorder are often subject to these behaviors. A 2012 study found that more than a third of adults with autism had experienced harassment or discrimination at work, including social exclusion, being ignored, and being overlooked for tasks they were capable of. (Hurley-Hanson, Giannantonio, & Griffiths, 2020).

The impact of social stigma on people with autism spectrum disorder

Autistic individuals often mask their traits to fit into social norms, a practice known as camouflage. While it helps avoid stigma, camouflage is mentally draining and linked to poorer mental health, delayed diagnosis, and poor educational achievement. It reflects pressure to fit in and fear of rejection, emphasizing the need for greater social understanding and acceptance (Turnock, Langely, & Jones, 2022).

The role of society in supporting people with autism spectrum disorder

Research shows that autistic students value teachers who are understanding, flexible, and supportive. They prefer calm, well-organized environments and teachers who listen to them, know them well, and are responsive to their needs. Studies highlight that children prioritize environmental adjustments, such as reducing sensory stress, over interventions aimed at changing their behavior. Autistic adults also value acceptance of their identity and reject interventions focused on normalizing behavior. Effective education for autistic students involves understanding their perspectives, adapting the learning environment, and focusing on strengths rather than trying to "fix" perceived deficits (Conn, 2019).
There is limited guidance on supporting employees with disabilities, especially those with ASD, in the workplace. While employers are improving diversity and inclusion policies, accommodations are more common for visible disabilities. Employees with ASD often face challenges due to their "invisible" disability, and disclosure rates are lower compared to those with physical disabilities. To address this, employers build trust with employees and provide strategies such as disability awareness training and dedicated accommodation teams. Accommodations for ASD can include structuring job roles, adjusting work environments, offering flexible hours, and providing neurodiversity training to staff (Hurley-Hanson, Giannantonio, & Griffiths, 2020).
People with ASD often struggle with social communication, making interactions with service providers, such as police officers and salespeople, challenging. Traditional methods such as role-playing and social stories have limitations. Recent studies suggest that VR technology can help people with ASD prepare for real-life interactions, such as contacting police officers, by simulating these situations in a safe and controlled environment. Furthermore, technology such as the iPhone and collaborative video games have been used to improve social skills in shopping and friendship-building. Online clubs, such as "The Lab," also provide spaces for socializing and communication through games and collaborative projects, helping individuals with ASD connect and interact with others more comfortably (Glumbić, Đorđević, & Brojčin, 2022).

Methodology

As a research sample, we had 100 people from the Republic of North Macedonia who completed a questionnaire to identify their attitudes towards people with autism.
Data analysis was carried out through the SPSS program, so we used statistical analysis to examine demographic questions, descriptive analysis was used to examine the level of attitudes towards Autism. Also, to examine the differences in the level of attitudes towards Autism depending on demographic characteristics, T test and Anova were used.
During the implementation of this research, as a research instrument to assess attitudes towards autism, we used the Societal Attitudes towards Autism Scale (SATA) questionnaire, translated and adapted into Albanian, consisting of a total of 26 statements, where the Likert scale with 4 points was taken as the evaluation scale.

Results

Table 6. Descriptive data on attitudes towards ASD in the general population (N=100)

	N	Minimum	Maksimum	Mean	Deviation
B1	100	1	4	2.99	.577
B2	100	1	4	2.98	.738
B3	100	1	4	3.03	.643
B4	100	1	4	2.61	.764
B5	100	1	4	3.42	.572
B6	100	1	4	2.64	.746
B7	100	2	4	3.39	.510
B8	100	1	4	2.76	.767
B9	100	1	4	2.81	.692
B10	100	1	4	2.90	.732
B11	100	1	4	2.81	.677
B12	100	1	4	2.61	.764
B13	100	2	4	3.27	.489
B14	100	1	4	2.62	.749
B15	100	1	4	2.52	.759
B16	100	1	4	2.93	.655
B17	100	1	4	2.95	.592
B18	100	1	4	3.06	.708
B19	100	1	4	2.95	.744
B20	100	1	4	3.11	.723
B21	100	1	4	3.06	.722
B22	100	1	4	3.36	.674
B23	100	1	4	1.91	.621
B24	100	1	4	3.23	.584
B25	100	1	4	3.01	.772
B26	100	1	4	3.07	.700
Attitudes	100	56.00	97.00	76.0000	8.52092
Valid N	100				

The data presented in Table 6., show that the variables from B1 to B26 represent the 26 statements with which we measure the level of attitudes towards the ASD in the general population.
Based on the above results, where the averages of all statements in particular are above 2.00, also based on the fact that the overall average obtained 76.00 is significantly greater than the expected average which in this case is 65, we say that the respondents exhibit positive attitudes at a high level.
If we return to the first hypothesis of the research which states: "The attitudes of the general population towards the ASD are at an average level.", based on the above arguments, we say that the first hypothesis is accepted.

Table 8. Statistical data of the main variables by gender (N=100)

	Gender	N	Mean	Deviation	Standard error
Attitudes	Female	60	77.72	8.749	1.129
	Male	40	73.42	7.561	1.196

Table 8 shows that the female gender with an average of 77.72 has a significantly higher level of positive attitudes than the male gender with an average of 73.42.

Table 9. T test for the difference between attitudes by gender

		Levene's Test for Equality of Variances		T-test for Equality of Means						
		F	Sig.	t	df	Sig.	Mean	Standard error		
Attitudes	Assumed variances	2.720	.102	2.534	98	.013	4.292	1.694	.931	7.653
	Unexpected variances			2.609	91.503	.011	4.292	1.645	1.025	7.558

Regarding the level of attitudes of the female and male genders, based on the Levin test with a value of F=2.720 and sig=0.102, p>0.05, we see that both gender groups are homogeneous, while according to the T test, sig=0.013, p<0.05, we conclude that there are statistically significant differences between the two gender groups based on the level of attitudes.
If we return to hypothesis 2 of the research in which we stated that there are differences in the level of attitudes on the ASD depending on the gender of the respondents, based on the above arguments, this hypothesis is accepted.

Table 10. Statistical data of the main variables by age (N=100)

	Age	N	Mean	Deviation	Standard error
Attitudes	>= 32	51	74.45	6.857	.960
	< 32	49	77.61	9.776	1.397

Table 10 shows that in terms of attitude levels, people over the age of 32, with an average of 74.45, have a lower level of positive attitudes than people under the age of 32, with an average of 77.61.

Table 11. T test for the difference between attitudes by age

		Levene's Test for Equality of Variances		T-test for Equality of Means						
		F	Sig.	t	df	Sig.	Mean	Standard error		
Attitudes	Assumed variances	8.051	.006	-1.878	98	.063	-3.161	1.683	-6.501	.179
	Unexpected variances			-1.865	85.712	.066	-3.161	1.695	-6.531	.208

Regarding the level of attitudes towards the ASD in people over the age of 32 and those under the age of 32, based on the Levin test with F value = 8.051 and sig = 0.006, $p < 0.05$, we see that the groups are not homogeneous, while according to the T test, sig = 0.066, $p > 0.05$, we conclude that there are no statistically significant differences between the two age groups based on the level of attitudes.

If we return to hypothesis 3 of the research in which we claimed that there are differences in the level of attitudes towards the ASD depending on the age of the respondents, based on the above arguments, this hypothesis is rejected.

Table 13. Analysis of variance of attitudes by education level (N=100)

		Sum of squares	df	Mean	F	Sig.
Attitudes	In between groups	213.299	2	106.650	1.483	.232
	Within groups	6974.701	97	71.904		
	Total	7188.000	99			

The significance value of the attitude variable resulted in sig=0.232, $p>0.05$, which means that we do not have statistically significant differences between the groups.

From all this, we conclude that regarding hypothesis 4 of the research which states: "There are differences in the level of attitudes on the ASD depending on the level of education of the respondents.", this hypothesis is rejected.

Table 15. Analysis of variance of attitudes by field of profession (N=100)

		Sum of squares	df	Mean	F	Sig.
Attitudes	In between groups	1523.791	4	380.948	6.389	.000
	Within groups	5664.209	95	59.623		
	Total	7188.000	99			

The significance value of the attitude variable resulted in sig=0.000, $p<0.05$, which means that we have statistically significant differences between the groups. Based on the fact that according to the above data, there are statistically significant differences between groups in the field of profession when it comes to the level of attitudes on the ASD in the general population,

there is a need to analyze the Post-hoc function, which clearly shows us between which groups this difference exists.

Table 16. Difference between categories or subgroups according to Post-Hoc Scheffe

Dependent variable	Profession	Profession	Mean	Standard error	Sig.		
Attitudes	Special educator and rehabilitator	Teacher	9.086*	2.190	.003	2.21	15.97
		Student	10.947*	3.125	.020	1.13	20.76
		housewife	9.519	3.414	.110	-1.21	20.24
		Other	10.430*	2.279	.001	3.27	17.59
	Teacher	Student	1.861	2.878	.981	-7.18	10.90
		housewife	.433	3.190	1.000	-9.59	10.45
		Other	1.344	1.927	.974	-4.71	7.40
		housewife	-1.429	3.891	.998	-13.65	10.80
		Other	-.517	2.946	1.000	-9.77	8.74
	Student	housewife-Other	.911	3.252	.999	-9.30	11.13

Regarding the attitude variable according to Post-Hoc Scheffe, statistically significant differences exist between the group of special educators and rehabilitators and the group of teachers (sig.=0.003), between special educators and rehabilitators and students (sig.=0.020) and also between special educators and rehabilitators and the group of persons belonging to different profiles (sig.=0.001), while there are no statistically significant differences between other groups.

If we return to hypothesis 5 of the research in which we asserted that there are differences in the level of attitudes on the ASD depending on the profession of the respondents, based on the above arguments, this hypothesis is accepted.

Conclusions

After analyzing the results of this research, summarizing the findings discussed above, we reached the following conclusions:

The first hypothesis, in which we stated that the attitudes of the general population on the ASD are at an average level, was accepted since the results showed that the overall average was above expectations.

Hypothesis 2, in which we stated that there are differences in the level of attitudes on the ASD depending on the gender of the respondents, analyzed through the T test, was accepted by the fact that in terms of attitudes, it was seen that the female gender has a significantly higher level of attitudes compared to the male gender and that these differences between the groups carry statistical significance.

Hypothesis 3, in which we stated that there are differences in the level of attitudes on the ASD depending on the age of the respondents, analyzed through the T test with cut point, was rejected by the fact that it was seen that there are no statistically significant differences between the two groups.

Hypothesis 4, in which we claimed that there are differences in the level of attitudes on ASD depending on the level of education of the respondents, analyzed through ANOVA, was rejected by the fact that it was seen that there are no statistically significant differences between the respondents depending on their level of education. Hypothesis 5, in which we claimed that there are differences in the level of attitudes on ASD depending on the profession of the respondents, analyzed through ANOVA, was accepted by the fact that statistically significant differences were seen between the groups special educator - teacher, special educator - student and special educator - different profiles.

Recommendations

1. **Raising Public Awareness of Autism**
2. **Strengthening Professional Knowledge and Competencies**
3. **Expanding Access to Specialized Support Services**
4. **Encouraging Social Acceptance and Inclusion**

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