

Ways of Social Inclusion and Integration of Children with Autism in Secondary Education, Inside and Outside the School Context, In the Region Thessaly

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Abstract

The aim of this study is to advocate the aggregate development of the future adults with autism, in terms of social integration. Thus, in order to study the autistic people's course of development through the interaction between primary and secondary education, it focuses on school-based as well as out-of-school activities and interventions used by special education staff in the Thessaly region. 99 people (mental health providers, trainers and relatives of people with autism) took part in the research, which combines qualitative and quantitative methods aiming to shed light on different perspectives of the issue. Early intervention, customized teaching methods and inclusive education seem to be of great significance, while the need for creating restricted programs and school-mental health services networks, along with a proper resource allocation play a significant role in the social integration of autistic people.

Keywords: *Autism Spectrum Disorder, Social Integration, Intervention, Inclusive Education, Teaching Strategies, Thessaly Region.*

Introduction

The way in which the correlation of primary-secondary education promotes the development of people with autism, in this case in the region of Thessaly, is the subject of this research. The primary concern, then, is highlighting the importance of connecting school activities, on the one hand, and extracurricular interventions, on the other, which leads to the achievement of the all-round development of socially integrated adults. A multifaceted understanding of the topic was ensured through the adoption of a mixed research method, which combined features of quantitative and qualitative research strategies. The research sample consisted of 99 mental health providers, educators and relatives of people with autism.

According to the TSM-5 system, Autism Spectrum Disorders (ASD) include various types of pervasive developmental disorders, which, due to the diversity that characterizes their manifestations, are difficult to approach educationally based on standardized practices and methods. However, a common denominator is the deficit in communication and social interaction of individuals on the autism spectrum, while repetitive behaviors are also a characteristic. The aim of this research is to cover the research gap regarding the educational approaches that would be the most effective for the social integration of autistic people.

The prevailing theories as well as the diagnostic criteria for ASD, are firstly described, making the complexity of the condition prominent. At the same time, the contribution of various genetic and environmental factors to ASD is examined, making clear the importance of its early detection and the application of adapted educational methods. All these are vital for everyone working towards finding effective interventions for people with ASD.

As far as the methodology of this research is concerned, as mentioned earlier, a mixed approach was adopted. More specifically, the initial data was collected quantitatively, using structured questionnaires, so that the wide range of experiences of those involved could be highlighted. Then, aiming to gain a deeper knowledge regarding the subtle differences - at a personal and contextual level - associated with the educational outcomes of people with ASD, the qualitative approach was chosen using the interview as a data collection tool.

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The findings of the present research could enrich the existing literature around the issue under study. At the same time, the contribution of this research is not only sufficient at a theoretical level, but also at a practical level, providing realistic directions for improving the educational process of people with ASD. Drawing up educational policies that promote the social integration of these individuals is of major importance, leading to the overall improvement of the quality of life of them and their families.

Previous research on Education of people with ASD

Undoubtedly, ASD is a research field that has greatly attracted scientists from many different disciplines. For example, the Vega Gea et al. (2016), in their article entitled "La Realidad Aumentada como herramienta de aprendizaje en Educación Infantil", study the use of the method of augmented reality (AR) in preschool education as a tool to enhance cognitive and social skills among children, emphasizing in those with ASD. The sample of their research was children, many of them diagnosed with ASD, who were in their third year of preschool education. At this point, it should be mentioned that the children were familiar with both the researcher and the research environment; that fact supported the effective application of AR, allowing the children to feel comfortable, to observe and to learn.

In the context of this research, the qualitative research approach was followed, using the case study as a method of data collection to provide the possibility of an in-depth analysis of its influence on the participants. In this context, a tool called "El Volcán" (The Volcano) was used, which is designed to promote environmental knowledge through interactive activities that enhance cognitive engagement. The research took place over a period of ten weeks, with sessions held daily to ensure regular interaction of the participants with the AR tool, while the observations concerning both their engagement and the overall learning progress were thoroughly recorded.

This research concluded that AR supports children's ability to learn about environmental issues, as it is immersive in nature as a tool. The interactive nature of AR lends itself to various learning styles, with children demonstrating improved cognitive and information recall capabilities regarding volcanic activity, volcano geographic locations, and environmental impacts. In fact, for children with ASD, the multisensory nature of AR aligns with their learning needs and abilities, providing them with a rich and highly beneficial educational experience.

In conclusion, their study highlights the potential of AR in preschool education, with the positive effect observed in children with ASD demonstrating the importance of connecting innovative technology with education. The impressive, interactive and at the same time accessible learning environment of AR promotes the social and cognitive development of students. These conclusions make clear the need for further research and experimentation around the application of AR in a variety of educational environments.

Moving on to the research titled "MICE mi: A method to determine the cognitive endophenotypes of mental illnesses" by Vicent Balanzá-Martínez et al. (2016), one reads about the connection between cognitive endophenotypes and mental illnesses (MIs). The research involved 14 experts from Spanish research institutions, who conducted a literature review of 5,176 publications focusing in the end on 83 articles that referred to the identification of cognitive or neurocognitive endophenotypes in people with psychiatric disorders and their relatives. In the context of this research, five criteria (correlation, heritability, stability, independence and reliability of the results) were determined, taking into account the relevant literature, which constitute a grading standard. At the same time, indicators were created to measure these criteria as well as a scoring system for the statistical analysis of the results. The scoring model, therefore, can help determine whether a cognitive deficit is classified as a valid, potential, or unspecified endophenotype of a mental illness.

The conclusions reached by the literature review demonstrated the fulfillment of the first two of the five criteria developed, namely correlation and heritability. Many studies have identified endophenotypes in individuals with mental illness and their first-degree relatives to a greater extent than in healthy individuals. However, the criteria of stability and independence appear to be questionable, as only a few studies conducted repeated measures and also few controlled for variables related to cognitive performance. The purpose of the

method proposed here is to address exactly these weaknesses through the application of a specific approach to identify cognitive endophenotypes. The possibility of early diagnosis of the subtype of mental illness and selection of the appropriate therapeutic strategies is thus provided.

The study highlights the role of systematic and repetitive methods in the field of neurocognitive research, while underlining the need for further research in order to validate the applicability of the method it proposes. It is important to enrich the knowledge about the cognitive endophenotypes of mental illnesses, aiming at the design of more effective prevention and treatment strategies.

The article on Autism Spectrum Disorder (ASD) presented in the Abstracts of the OHBM 2022 Annual Meeting refers to a number of studies on different aspects of ASD such as neural correlates, cognitive impairments and potential biomarkers. In fact, the range of ages and developmental stages of the participants in these studies is particularly wide, since they can be from infants at risk of autism to adults with diagnosed ASD.

The study by Tudela et al. (2017) "Aprendizaje-servicio en la Universidad: Ayudando a la escuela a atender a la diversidad a través de las TIC" explores the application of the service-learning (SL) method in university education in order to approach diversity through ICT. In this study, which lasted from 2013 to 2016, more than 800 undergraduate students of Preschool and Primary Education of the University of Jaén participated, while the micro-projects on which they had been working were more than 200.

The methodology adopted by the researchers was based on service learning, which interlaced learning objectives with community service. The students were asked to work in teams, designing a complete ICT resource to teach reading, maths, social skills and other subjects, while also creating multimedia learning resources for hearing-impaired students, all tailored to the needs of two primary schools in the area. In order to ensure the usefulness and, above all, the appropriateness of the material, there was a close cooperation of all those involved in this process, ie the students, the professors and the teachers of the schools.

The study demonstrated the highly supportive nature of the service-learning approach for university students, promoting not only the acquisition of basic skills but also the cultivation of their sense of social consciousness and responsibility. Also significant is the fact that school students were very receptive to the material designed for them. In this context, the university students declared that they were very satisfied with their involvement in the specific program, both because of the opportunity provided to put their knowledge into practice, and from an emotional point of view, knowing that in this way they contributed to the community. This approach highlighted the role of preparing future teachers around the use of innovation and technology in a variety of educational settings.

In conclusion, service learning appeared to be an effective educational strategy, oriented towards the integration of academic learning into community service. The benefit, then, is twofold: on the one hand, university students enjoy a richer educational experience, and on the other hand, school students get the opportunity to utilize innovative, useful and interesting material that meets their real needs.

Literature Review

Definition of Autism

By referring to the term "autism" we essentially mean a broad-spectrum disorder, which, as has been emphasized by a number of scientists, presents great heterogeneity in terms of both the factors of its creation and the ways of its manifestation (Wing & Gould, 1979). Autism diagnostic criteria have been gradually refined based on the DSM-IV and then DSM-5 guidelines, now focusing more broadly on Autism Spectrum Disorder (ASD) (American Psychiatric Association, 2024). Its main characteristics are the deficit in social interaction and repetitive behaviors, with these symptoms ranging from mild to very severe, while it is important to mention that the spectrum of ASD includes even conditions such as Asperger's syndrome.

Development of ASD

There has been a lot of research concerning the development of ASD and especially the role of genetic and biological factors in this. Buxbaum et al. (2012) have underlined the association of ASD with the neuronal and synaptic functioning of people with genetic mutations. Atypical brain connectivity, as well as amygdala abnormalities, have also been identified by neurobiological research, justifying social and communication deficits of people with ASD (Müller et al., 2011; Schumann et al., 2009). Furthermore, a correlation between prenatal exposure to environmental factors like maternal infections or certain medications, and genetic abnormalities has been underscored by Bromley et al. (2010). Finally, interesting are the findings of twin studies, as Bailey et al. (2015) mention, demonstrating a higher proneness for ASD in monozygotic twins compared to dizygotic ones.

Early Intervention

Early intervention has a crucial role in the developmental course of children with ASD. As Dawson et al. (2010) point out, behavioral interventions that take place early, being individualized and intensive, the earlier, more individualized and intensive the behavioral interventions, foster children's cognitive, social, and communication skills. Early intervention practices include applied behavior analysis, occupational therapy and speech therapy. Though, economic and social factors, as well as healthcare differences and long waiting lists often thwart access to these services (Mandell et al., 2005), making the need for reconsidering the access system to ASD resources concrete.

Educational Challenges

The challenges that people with ASD face in the educational process are particular, including both cognitive difficulties (e.g. information processing) and behavioral problems (e.g. aggression, self-harm tendencies, etc.). These challenges often come as a result of impairments in social interaction but also repetitive behaviors and excessive selectivity of attention of these children (American Psychiatric Association, 2024; Bailey et al., 2015).

Inclusive Education Models

During the last years, there has been much emphasis on inclusive education, which promotes learning for children with ASD together with their neurotypical peers. This means that mainstream education systems have to be transformed in order to meet the needs of children with ASD as far as their sensory characteristics and their learning styles are concerned (Quatrosi et al., 2024). In this framework, supportive mechanisms such as Individualized Education Programs (IEPs), and of course and educators' further and specialized training are highly required.

Methodology

Research Plan

The methodology followed in this research is mixed, adopting both quantitative and qualitative research strategies and tools. Thus, a comprehensive understanding of the issue under study became possible, allowing the researchers to achieve their goal, that is, to discover strategies for social integration of people with ASD.

Participants

A sample of ninety-nine people, consisting of thirty-three educators, thirty-three relatives of children with ASD, and thirty-three mental health providers, participated in the quantitative phase, providing a multilevel approach to educational inclusion as a process. In the qualitative phase, on the other hand, six people participated, who were selected by the researchers to be sufficiently different to ensure the

maximum possible objectivity of the research results.

Research Tools

Corresponding to the research methods, the study utilized both quantitative and qualitative data collection research tools. As far as the quantitative phase is concerned, a questionnaire consisting of four sections was designed, with the aim of approaching the issue of integration and the developmental path of autistic individuals as multifaceted as possible. Its four sections concerned: (a) the demographic characteristics of the participants, (b) their educational experiences, (c) their perceptions about the effectiveness of the inclusion of people with ASD and (d) their ideas about ways to improve of the strategies applied so far in this field. The heterogeneity of the participants that made up the research sample made the results representative and unbiased in terms of criticizing current integration strategies, providing a comprehensive picture of the situation, from different perspectives.

Regarding the qualitative part of the research, the tool used to collect the data from the six participants was the semi-structured interview. The advantage of this specific tool, which was also the reason for its selection, is the possibility it provides the researcher, on the one hand, to gain a deeper understanding of the issue under study since the respondents can answer more freely compared to filling out a questionnaire, and, on the other hand, to adjust his questions during the interview according to the data collected at each moment. This strategy is also common when participants are intended to talk about their personal experiences and opinions.

Data Collection

As mentioned earlier, the aim of this research was to outline the relationship between education (primary and secondary) and the developmental path of autistic individuals, focusing the study on an area of Thessaly. For the needs of this objective, it was considered necessary to adopt a mixed approach regarding the methodology of collecting the research data, in order to obtain a comprehensive view of the issue from several perspectives.

In the quantitative research phase, a questionnaire consisting of four sections was used, which related to the demographic characteristics of the participants, their educational experiences, their perceptions of the degree of effectiveness of the integration process and their suggestions for its improvement. The purpose of the questions was to comprehensively cover the issue of integration and the developmental path of people with ASD. Thus, the participants who made up the research sample were selected in a way to achieve a more global understanding of the different views on the inclusion of people with autism, from people who are closely related to such people from different perspectives. It is important to mention, at this point, that the data collected demonstrated a deep understanding of the integration process by all participants.

The reason the researcher chose to collect quantitative data was so that the research findings would acquire a statistical basis, so that they could be analyzed objectively and lead to the emergence of connections and patterns between them. Therefore, the four sections that made up the questionnaire were designed to capture different aspects of the participants' views, concerns and experiences. A variety of data was thus collected, with the intention of following their thorough analysis and finding patterns, trends and correlations between certain variables by the researcher.

As we mentioned, the research used the semi-structured interview tool to collect the qualitative data from the six participants in that phase. The flexible nature of this tool and the possibility it offers the researcher to delve into complex experiences and opinions that are not easily captured by quantitative methods and tools, were the reasons why this tool was chosen in the qualitative phase of the research. Open-ended questions allow respondents to share their views freely and in detail, while at the same time maintaining a degree of structure to ensure that all topics of research interest are covered.

The basic design of the interview included questions intended, on the one hand, to delve into the educational experiences of the participants, and, on the other hand, to elicit their perceptions of the inclusion process and the development of individuals with autism. In this type of research, it is usual to use a small sample size of participants, which helps in the thorough analysis of the data by the researcher, however, the selection of participants was made, as always, based on the suitability of each participant in relation to the purposes and the research questions.

Data Analysis

Regarding the data analysis process, it was divided into two parts, corresponding to the methodological strategies chosen for their collection. Thus, this process included the thematic analysis of the qualitative data and the statistical analysis of the quantitative data. In the statistical analysis stage, statistical techniques were followed which are suitable for highlighting trends, patterns and correlations between variables, thus providing a comprehensive picture of the issue. On the other hand, the interviews of the participants in the qualitative phase of the research were transcribed, and then these transcripts were coded and grouped into categories, in order to highlight important categories of responses (thematic analysis). Thus, the quantitative data of the first stage were reinforced and explained to some extent by those of the second stage of the research.

The combination of these two techniques of analysis of the research data, enabling the utilization of the benefits of both the qualitative and the quantitative approach, gave the research a thorough and reliable character. The opportunity was given to triangulate the data, thus providing even more significant statistical information. After all, the adoption of a holistic approach to data collection and analysis was necessary in order to achieve a deep understanding of how the developmental course and inclusion of individuals with autism in the context of primary and secondary education is influenced by specific factors.

Ensuring a comprehensive understanding of the subject under study governed the entire research design, requiring special care during data collection. The adoption of a mixed research strategy, including qualitative and quantitative data collection methods and corresponding tools, allowed the researchers to gain access to a wide and multidimensional range of data. They were thus able to scrutinize these data, ensuring not only the statistical validity of the research results but also their abundance in terms of information. Therefore, it became possible to understand the complexity that characterizes the development course and the process of inclusion of people with ASD in the context of education.

Validity and Reliability

The study of biography around ASD treatments has largely highlighted an interdisciplinary strategy, drawing on positions from the disciplines of psychology, education, and medicine. This strategy leads to more valid results as it ensures that the multidimensional nature of ASD is taken into account. This is achieved through the integration of a wide range of techniques, including speech therapy, occupational therapy and applied behavior analysis. The correct application of these techniques ensures a strong link between theory and practice interventions.

In addition, the research consists of longitudinal studies around the development of individuals with autism. Designs of this kind are widely used in ASD research because observing the long-term effects of treatments strengthens the validity of research conclusions. Research therefore demonstrates the positive impact of these interventions on the social interaction and academic performance of individuals with autism.

The degree of reliability of research is usually assessed based on the extent to which its findings are found in other related studies and under different conditions. Acknowledging the benefits of early, individualized treatment for individuals with ASD is common ground in a large body of research. For example, a number of researchers have highlighted the effectiveness of the applied behavior analysis

(ABA) method in supporting autistic individuals in language learning, as well as in the cultivation of social skills and adaptive behaviors. It is, in fact, important to mention that these results have been confirmed in many different conditions and research contexts.

Ensuring consistency in the identification and categorization of a specific ASD disorder is also achieved through the use of standardized diagnostic criteria, such as those included in DSM-5. Without this kind of standardization, it would not be possible to compare the results between respective studies, which would help strengthen the reliability of the research. There is a large amount of research on the issue of dealing with the symptoms of ASD, which highlights the role of early diagnosis and intervention.

Furthermore, the large number of participants that have been the samples of the relevant researches ensure the reliable generalization of the research results. After all, the reason why participants of different age and social profile and level of ASD severity were chosen is precisely to ensure the diversity and ecological validity necessary for the application of the research results in other contexts.

In addition to what was mentioned, related research has also attempted to study how genetic and environmental factors influence the development of ASD. It is therefore possible to generalize the results of the present research at this level as well, as it provides a framework applicable to a multitude of situations, recognizing the complexity of ASD. The latter, after all, is vital to the creation of interventions oriented to the needs of individuals with ASD.

The interdisciplinary approach to the issue under study in the context of this research is one of its strongest points. It is undeniable that interventions could not be comprehensive and as effective against the diverse needs of people with ASD if they did not incorporate positions and strategies from all relevant scientific disciplines (from medicine, psychology and education). This tactic, in addition to making the research results more valid, also promotes the applicability of treatments in a wide range of contexts.

What is more, the selection of relatives of people with ASD as participants in this research is another element that strengthens its reliability and validity, as the data collected is realistic, based on the real daily life of people with ASD, which leads to true conclusions of whole process. That is why the opinions of their relatives are included, while the consistency of the interventions in the school and extracurricular environment is ensured. Reaching the same conclusions in different environments is, as previously mentioned, a necessary condition for the sustainability of the intervention in the long-term.

Finally, as the relevant literature emphasizes, the use of technology in ASD treatments works to enhance the validity and reliability of research. The use of technology provides the possibility of continuous data collection and monitoring of interventions. Technologies such as tele health services, smartphone applications and virtual reality (VR) offer new possibilities for the implementation and monitoring of interventions, making it possible to quantify outcomes and facilitate the implementation of interventions that have been found to be effective in different populations and under different conditions.

Ethical Considerations

The current study regarding ASD places great emphasis on ethical constraints, ensuring the respect and defense of the rights, dignity and general well-being of each participant. Especially in cases such as this one, where we are referring to vulnerable population groups, it is imperative to maintain the integrity (physical, mental and mental) of individuals and build a relationship of trust with them, which entails the careful consideration of ethical and ethical issues.

A key ethical issue is informed consent. It is of paramount importance to ensure that both research participants and their legal guardians understand the nature of the research, its purpose, the methods that will be used, the potential risks to which they may be exposed, and the potential benefits that they will derive from the research. their participation in the research. To achieve this goal, information is

provided in an understandable way, in writing or orally, depending on the cognitive and communication abilities of the participants, while the researcher remains willing to answer possible questions or objections. This is not a trivial process and should in no way be treated as subordinate, as it is the one that ensures the autonomy of individuals.

A second but equally important ethical issue that - as it should - concerned the researcher is confidentiality. The confidentiality of the information provided by the participants is mandatory, especially when it comes to sensitive data. The document, therefore, describes in detail those movements of the researcher that ensured the anonymity of the information and its safe preservation for the period of time necessary for the needs of the research. To achieve this, access to data is strictly controlled, and encrypted identifiers replace personal information. After all, ensuring confidentiality does not only apply to the immediate environment of the research, but also to a wider context that includes the safe sharing and presentation of data.

Furthermore, research fully respects the principle of beneficence, enhancing potential benefits and limiting potential harms to participants. Since the purpose of the research is to promote knowledge and the right intervention for people with ASD, it includes tests and interventions aimed at the cognitive and social cultivation of these people. At the same time, it is important to mention that the research team is willing and ready to manage any potential complaint or negative event that arises during the research, either by providing appropriate support or referring the person concerned where necessary.

Similar to the principle of beneficence, the principle of non-maleficence binds researchers not to harm participants. It is therefore ensured that the research is designed in such a way that the participants are not exposed to any form of risk, including any interventions or assessment procedures. The document describes in detail the design of the techniques that were applied to detect and limit potential risks, as well as to pilot the procedures. This, of course, requires taking into account the special needs of individuals with ASD, so that the techniques are modified appropriately and in relation to the developmental level of these individuals.

Another ethical issue that governs the research is the respect towards the other, the recognition of his value as a human being and his dignified treatment. The procedures that took place in the context of this research guarantee the recognition and communication of the views of all participants. To ensure this, both the people with ASD who participated in the research and their relatives participated in the design and execution of the research. In fact, this process worked in support of the applicability of the research.

The questions of equality and inclusion as moral requirements also occupied the researcher. Since the aim of the latter was the participation in the research of people with ASD of different profiles and functional level, the elimination of any relevant obstacle and the realization of certain concessions was a necessary condition. At the same time, fair treatment of participants and distribution of research rewards to them are indicative of equal treatment of all in the research process.

Finally, the broader societal implications of research cannot be overlooked when discussing ethical constraints. It is clear that this research effort was not only made to cover the research gap and to offer on a practical level early intervention in the field of ASD, but also to inform and sensitize public opinion in the direction of supporting autistic individuals. This, then, is something that is emphasized in the present research, through which it is attempted to promote inclusive education, highlight the needs and defend the rights of people with ASD, and present research results aiming to reshape current practice and of the existing policy in general.

Results

In this section, an attempt is made, through the analytical presentation of the results of the research, to outline the degree and the way in which primary and secondary education affects the developmental path

of people with ASD in the region of Thessaly. Data were collected using quantitative and qualitative methods from ninety-nine participants, which included relatives of individuals with autism, educators, and mental health providers.

Numerical Data

Response Rates

As one can see, the response rate was high across all participant groups:

- Trainers: 95%
- Relatives: 97%
- Mental Health Providers: 94%

Quantitative Analysis

Demographic Characteristics

Age Distribution

The majority of the participants were aged between 30 and 50 years old:

- Trainers:
 - 30-40 years old: 28%
 - 41-50 years old: 42%
- Relatives:
 - 30-40 years old: 33%
 - 41-50 years old: 36%
- Mental Health Providers:
 - 30-40 years old: 30%
 - 41-50 years old: 40%.

Gender Distribution

- Trainers:
 - Female: 60%
 - Male: 40%
- Relatives:
 - Female: 70%

- Male: 30%
- Mental Health Providers:
 - Female: 65%
 - Male: 35%

Professional Experience

The average professional experience of the trainers in educational settings was 10 years.

A quite big portion of the relatives (45%) had already been exposed to special education.

The average professional experience of the mental health providers had an average of 10 years in educational settings.

Perceptions on the Effectiveness of Inclusion Methods

On a scale from 1 (ineffective) to 5 (highly effective), the participants rated the effectiveness of current inclusion methods:

Overall Effectiveness (average rating)

- Trainers: 3.5
- Relatives: 3.2
- Mental Health Providers: 3.7

Perceived Challenges

- Lack of specialized training for educators:
 - Trainers: 78%
 - Relatives: 65%
 - Mental health providers: 82%
- Inadequate resources and support:
 - Trainers: 72%
 - Relatives: 80%
 - Mental health providers: 75%
- Social stigma and lack of awareness:
 - Trainers: 60%
 - Relatives: 70%

- Mental health providers: 68%

Evaluation of Activities and Interventions

Participants evaluated the effectiveness of specific activities and interventions on a scale from 1 (ineffective) to 5 (highly effective):

Classroom-Based Activities (average rating)

- Sensory-friendly classrooms: 4.0
- Individualized Education Plans (IEPs): 4.2
- Peer mentoring programs: 3.8

Extracurricular Activities (average rating)

- Sports and physical activities: 3.5
- Arts and music therapy: 4.1
- Community outings and social skills groups: 3.9

Suggestions

Participants made recommendations for inclusion practices enhancement:

Specialized Training and Professional Development

- 85% of the trainers underlined the need for ongoing training on autism and inclusive teaching strategies.
- 78% of the relatives suggested that workshops and seminars for both educators and parents take place.
- 90% of the mental health providers advocated for interdisciplinary training programs.

Improved Support Systems

- Establishing support teams in schools:
 - 75% of trainers
 - 80% of relatives
 - 85% of mental health providers.
- Increasing funding for specialized resources and tools:
 - 70% of trainers
 - 85% of relatives
 - 80% of mental health providers

Table 1: Answers about Parallel educational support 1

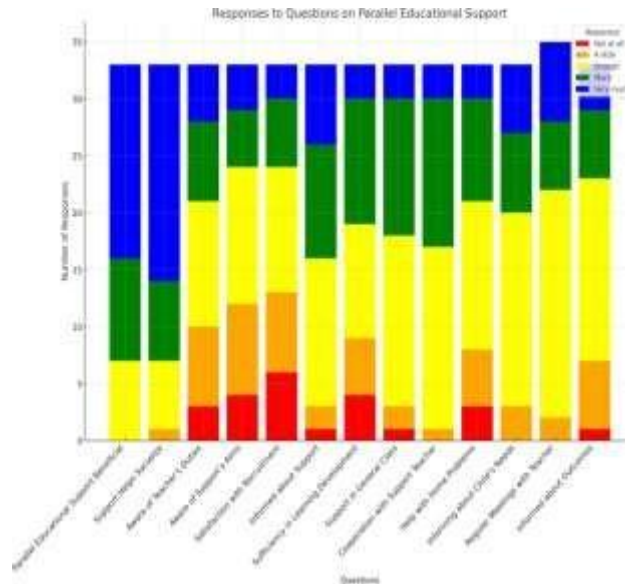
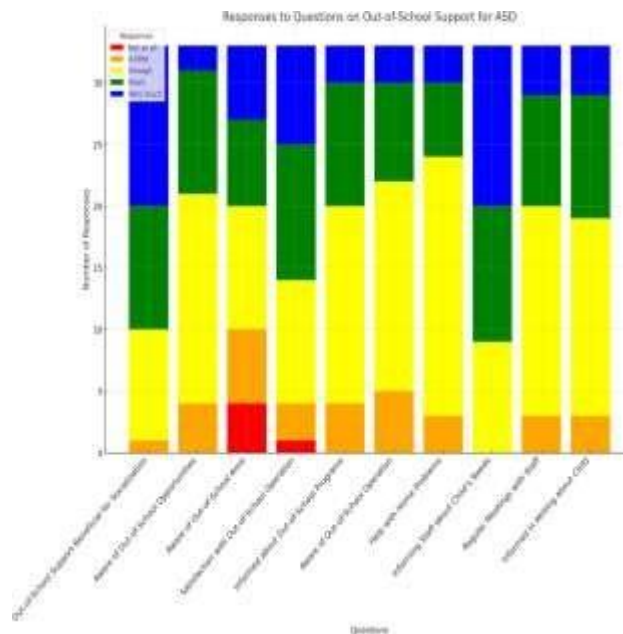


Table 2: Answers about Parallel educational support 2



Community Engagement and Awareness

- Running awareness campaigns about reducing stigma:

- 65% of trainers
 - 75% of relatives
 - 70% of mental health providers.
- Encouraging community involvement in school activities:
 - 60% of trainers
 - 70% of relatives
 - 68% of mental health providers

The quantitative analysis, based on the responses of the trainers, relatives, and mental health providers, demonstrated several notable trends in the perceptions and experiences of these stakeholders.

The aim of the quantitative analysis of data was to look into the efficacy of a number of educational approaches as well as support networks for autistic people in Thessaly. The study made use of a thorough strategy, having ninety-nine participants mental health professionals, trainers and relatives of autistic people complete a four-part questionnaire. In order to present a comprehensive view of the educational experiences and their results on autistic people, a broad sample of participants was carefully chosen.

Gender distribution analysis demonstrated that there were more female respondents than male respondents in the study (20 to 13). This could reflect broader cultural trends of characteristics of the study population.

Continuing with the demographic analysis, the age distribution of the sample showed a fairly wide range, with the participants being from under 25 to over 56 years old. This worked to the advantage of the researchers, who were thus able to achieve a deeper analysis of it by collecting data from people of different generations. For the purposes of the survey, the participants were divided based on their age into the following groups: under 25, 25–35, 36–45, 46–55 and over 56. The age group with the highest percentage of representation was that of the ages 36 to 45 years old, highlighting the large number of middle-aged professionals called upon to provide educational support to autistic people.

As far as the marital status of the participants is concerned, it appeared to show large variations between married, single and divorced. The majority, however, were married, highlighting the role that family dynamics play in supporting the educational and developmental needs of autistic individuals.

Moving on to the educational level of the participants, it is clear that this affects both their perceptions and the effectiveness of the interventions they attempt to integrate autistic people. In the present research, a wide variation in the educational level of the participants was observed, with some of them being primary school graduates and others holding a master's or even a doctorate degree. This differentiation of the educational background of the participants emphasized once again the role it plays in the selection and implementation of specific educational strategies for autistic people.

At the same time, the professional level of the participants appeared to show significant differences, with the distribution including both unemployed people and people with low, medium and high professional employment. It is important, at this point, to mention that the category that dominated was that of reduced employment, which was a source of concern as to whether this condition and the resulting economic hardship of the respective participants affected their perceptions of the educational support programs.

Speaking of financial difficulties, it was found that a large portion of participants lived in difficult conditions, followed by those who live in moderate and pleasant conditions. This finding was important in order to understand the wider social and economic context of the provided educational support.

Regarding the places of residence of the research participants, it was observed that the majority of them resided in urban areas, with only a small percentage living in semi-urban or even rural areas. This fact could act as a reinforcement towards access to educational resources and support networks.

The investigation of the existence and form of parallel educational support received by the participants showed high rates of receiving public and less private support. This, in fact, highlights the dependence of people with autism on the public education system, which significantly affects the existing education policy and the allocation of the relevant budget.

The study of the responses of the participants regarding the parallel educational support of students with ASD led to an in-depth understanding of the educational experiences and perspectives of viewing the issue. The variation of the answers is characteristically large in this case as well, highlighting the wide range of experiences of the participants regarding their knowledge and perceptions about the effectiveness of support systems.

Finally, the conclusions reached by this research underline the complex nature of the educational support of autistic individuals. Indeed, the great differentiation of the research participants in terms of their demographic characteristics such as age, gender, marital status, educational and professional level, and their socio-economic status, provides the possibility of an in-depth understanding of the different perceptions regarding the education of autistic people and its effectiveness.

As found, it is necessary to design an integrated strategy to support the educational needs of people with autism, with the partnership of the public and private sectors. In any other case, to the extent that until now the satisfaction of these needs depends on the public education system, ensuring strong educational policies and the necessary educational resources becomes necessary to ensure fair and effective access of people with ASD to education.

Qualitative Analysis

During the qualitative analysis stage of the data obtained from the participant interviews, some key issues emerged, inextricably linked to the educational and developmental path of individuals with autism, and to our understanding of these paths. One of these issues is the importance of early intervention, with participants underlining its crucial role in the development of social and communication skills of autistic children, particularly in primary school classes. As considered by the majority of the respondents, this kind of early interventions worked as a helper in the students' smooth transition to secondary education and in their subsequent academic career. In other words, the importance of not only the quality but also the timing of early intervention in the effectiveness of the latter became clear.

Another issue that emerged from the analysis of the qualitative research data was the importance of designing and deriving individualized teaching methods for people with autism, given that their particular needs and inclinations often cannot be well supported by standardized strategies. Approaching the teaching of autistic students in such a way, taking into account each individual's unique characteristics, skills and difficulties, can significantly enhance the learning process. This, in turn, leads to the promotion of their personal development and social integration. At the same time, it was found that teachers who were able to design from scratch or modify their teaching design individually for each autistic student achieved better results in terms of involving these students in the educational process and supporting them in general.

Turning outside the classroom, during the qualitative analysis another important issue emerged, which concerns the family's participation in the educational process of autistic children. The research participants emphasized the need for support for these families from the wider community, such as mental health

professionals, social services, etc., in order to achieve a holistic approach to meeting the needs of autistic individuals. Thus, once again, the inextricable link between collective disengagement and the effectiveness of educational interventions for children with ASD is highlighted.

The difficulties faced by autistic students during their transition from primary to secondary education due to the new situations and different standards they have to adapt to, seemed to be another issue that concerned the participants. As it has been repeatedly emphasized, therefore, the role played by the detailed planning of this transition is crucial in ensuring the academic continuity and the correct developmental course of children with ASD. In this context, according to the respondents, the provision of specialized support during this period, both at an academic and advisory level, could be particularly supportive.

Moving further into the qualitative analysis of the research data, the support of autistic students at the level of planning school facilities and the teacher was also considered important. In particular, since sensory sensitivity is often found in people with ASD, participants emphasized the importance of designing facilities where autistic children are educated so that they have access to sensory instruments, toys and related amenities, as well as quiet spaces. Taking care of these kinds of sensory adaptations has been found to work encouragingly for students with autism, increasing their engagement in the learning process and reducing feelings of anxiety.

Another of the main issues that seemed to concern the participants is the continuous training and professional development of teachers and other staff who work with autistic students. Continuous training and information about the latest research in the field of ASD and practical familiarity with new strategies for teaching and supporting autistic children are of major importance in achieving effective educational interventions. As emphasized during the interviews phase, qualified staff are those who can effectively implement individualized teaching, ensure a calm climate within the classroom and eliminate factors that hinder the learning process.

Finally, the participants emphasized the importance of promoting the social inclusion of autistic children. It is a fact that children with ASD face obstacles in social interaction, finding it difficult to create and maintain relationships with their peers. In this context, it has been found that activities such as group work and peer mentoring programs reduce feelings of isolation and promote the cultivation of students' social skills. After all, as previously mentioned, educational environments that eliminate exclusions of all kinds and that promote acceptance and social interaction are those that essentially strengthen the social integration of children with ASD.

Recommendations

The main proposal that emerged from this research is the implementation of a multi-level approach to the education of children with ASD, the key components of which are early intervention, the inclusion and use of a wide range of educational strategies and innovative technological tools. Regarding the first component, it was strongly emphasized during the research that the implementation of early intervention programs plays an important role in cultivating the social and communication skills of students with autism, and adaptive behaviors in general. Regarding inclusive education, the findings of this research confirm the relevant literature around its basic principles, according to which the primary goal is to ensure the integration of autistic children in regular classes, emphasizing individualized and effective teaching methods, and with the help of relevant legislative provisions that protect them and support their rights. Indicative teaching strategies that emerged in the context of this research as effective are the TEACCH approach which is a structured method, as well as the use of social stories and sensory integration methods. A third component of the proposed educational approach is the use of technology and a multitude of tools it provides, ideal for improving the learning outcomes of autistic children. Such tools are various types of communication devices, interactive educational software, and of course virtual and augmented reality. Finally, in addition to those mentioned, visual support, peer tutoring, and differentiated instruction are approaches that can further foster an encouraging educational environment for students with ASD.

Conclusion

Concluding, it is appropriate to attempt to synthesize the main findings that emerged during its quantitative and qualitative phase, so as to offer a comprehensive picture of the way in which primary and secondary education affects the developmental course of autistic people in the area of Thessaly.

The present research confirmed the key contribution of holistic support systems and educational strategies adapted to the needs of people with ASD in their social integration. The teachers who took part in the research emphasized the need for the implementation of specialized education programs, however they repeatedly referred to the lack of staff and resources, which acts as a brake in the effort to include autistic students. At the same time, the participating relatives of people with ASD praised the positive impact of structured school environments on the cultivation of children's social and communication skills, but they seemed strongly concerned about the lack of effective programs to ensure their smooth transition from primary to secondary education. Finally, the mental health providers who participated in the survey emphasized the importance of creating a network of school health services that can design and implement early interventions for autistic children, enhancing their academic and social development.

The challenges mentioned by the three groups of participants highlighted systemic constraints such as the social stigma of people with autism, inadequate staff training and lack of resources. However, effective practices have also come to light, which have been adopted mainly in schools that apply holistic educational approaches and individualized teaching plans, supported by interdisciplinary teams.

Given what was mentioned, this research has reached the following propositions:

- Regarding the issues of insufficient training of the educational staff, there should be increased investment from the state's side in their further training and professional development in the direction of educating people with ASD.
- With regard to the limited resources available, not only the increased investment but also their proper distribution, both at the state level and within each school organization, is imperative in order for teachers to have at their disposal what is needed to more effectively deal with the needs of autistic students.
- In terms of ensuring the implementation of correct interventions according to the developmental stage of each child with ASD, it is proposed to create cooperation networks between schools and health professionals who will be able to provide the necessary support regarding the type and method of implementation each intervention.
- Turning to the question of the transition of autistic children from one stage of their life to the next, the proposal of the present research is the design of structured programs to support their transition from secondary education to adulthood, with the main axes being the promotion of their social integration, the cultivating independent living skills and promoting their vocational training.
- Finally, given the impact that social stigma has on the lives of people with ASD, it is of major importance for the state to make it a priority to eliminate any form of exclusion, through the formulation of policies that defend the rights of these people and promote social awareness.

This research demonstrates the need for a comprehensive approach regarding the education of individuals with ASD, in which interdisciplinary collaboration, community involvement, and the application of specialized strategies coexist. This will improve the results of their primary and secondary education, in

terms of cultivating both their cognitive and social skills, necessary to achieve their best quality of life.

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