Hapres | Journal of Psychiatry and Brain Science

jpbs.hapres.com

Short Report

Migration Status and Age at Assessment for Suspected Autism Spectrum Disorder at Two Specialist Centres in Northern Italy

Chiara Centomo [1,2], **Patrizia Stoppa** [1], **Andrea E. Cavanna** [2,3,4,5,*]

[1] Department of Child and Adolescent Neuropsychiatry, ASST Papa Giovanni XXIII, Bergamo 24127, Italy; chiara.centomo@unibs.it (CC); pstoppa@asst-pg23.it (PS)

[2] School of Medicine and Surgery, University of Milano-Bicocca, Milan 20126, Italy

[3] Department of Neuropsychiatry, BSMHFT and University of Birmingham, Birmingham, B15 2FG, UK

[4] Sobell Department of Motor Neuroscience and Movement Disorders, Institute of Neurology and University College London, London, WC1N 3BG, UK

[5] School of Health and Life Sciences, Aston Institute of Health and Neurodevelopment, Aston University, Birmingham, B4 7ET, UK

* Correspondence: Andrea E. Cavanna, Email: a.e.cavanna@bham.ac.uk.

ABSTRACT

Background: Migration has increasingly been recognised as an environmental factor potentially affecting the development and course of autism spectrum disorder (ASD). Little is known about the impact of migration status on the timing of access to specialist assessment of young immigrants with ASD.

Methods: We conducted a retrospective chart review to investigate the relationship between migration status of 184 children with ASD (138 males, 75.0%) and their age at first medical appointment for suspected ASD at two specialist centres in Northern Italy.

Results: According to migration status, 99 individuals were classed as immigrant (74 males, 74.7%) and 85 as non-immigrant (64 males, 75.3%). Our findings confirmed the effect of migration status on the age at first medical appointment for suspected ASD, with immigrants accessing specialist assessment at a significantly earlier age compared to non-immigrants ($F = 3.97$; $p = 0.048$). The lower prevalence of high-functioning ASD in immigrants ($X^2 = 16.32$; $p < 0.001$), likely related to environmental and cultural factors, could be responsible for their earlier age at first medical appointment.

Conclusions: The relationship between migration status and ASD should be the focus of further research, in order to facilitate the development of more personalised care pathways for childhood ASD in different clinical populations.

KEYWORDS: autism spectrum disorder; migration; assessment; age; severity

Open Access

Received: 18 November 2024

Accepted: 30 December 2024

Published: 31 December 2024

J Psychiatry Brain Sci. 2024;9:e240012. https://doi.org/10.20900/jpbs.20240012

INTRODUCTION

Autism spectrum disorder (ASD) is a neurodevelopmental condition that affects approximately 65 out of every 10,000 individuals globally [1]. In recent years, there has been a noticeable rise in the number of children being diagnosed with ASD. This increase can be attributed, at least in part, to significant advancements in case detection and early diagnosis methods. Despite the growing public health concern, the complex origins of ASD have yet to be fully understood. Researchers have dedicated substantial efforts to unravelling the multifaceted factors contributing to its development, including intricate interactions between various genetic and environmental factors [2].

Among the environmental contributors to the development of ASD, migration has emerged as an increasingly more common factor [2]. Initial reports suggested that migration status could have an impact on the age at first medical appointment for suspected ASD, however preliminary studies yielded heterogeneous findings [3,4]. The investigation of the possible role of migration as a predictor of the age at assessment for suspected ASD is driven by a twofold aim: improved care pathways for children with neurodevelopmental conditions and targeted interventions to address preventable health disparities. This study aims to investigate whether migration status is associated with differences in the age at first medical appointment for children with suspected ASD. Specifically, we retrospectively reviewed the migration status (immigrant versus non-immigrant) of children diagnosed with ASD at two specialist centres in Northern Italy, in order to assess possible differences in the timing of access to specialist assessment.

This study draws on the Cultural Competence Theory and the Social Ecological Model to explore the relationship between migration status and the age at first medical appointment for suspected ASD. These theories suggest that cultural differences, social factors, and access to healthcare resources may influence the identification and diagnosis of ASD in immigrant populations. Early identification and intervention are crucial for optimal outcomes in individuals with ASD. Despite the retrospective nature of the data and the specific characteristics of the study population, this study can improve our understanding of the factors that influence the timing of diagnosis, thereby allowing us to work towards reducing disparities in access to care and improving the overall health and well-being of children with ASD.

METHODS

As part of a clinical audit, we conducted a retrospective examination of the medical records of individuals with ASD who underwent their initial assessment at the Child and Adolescent Neuropsychiatry Units in Northern Italy, specifically at 'Papa Giovanni XXIII' in Bergamo and 'San Gerardo dei Tintori' in Monza. Both of these specialist clinics are situated in Lombardy, the Italian region with the highest rate of immigrant population [5,6]. This study was conducted as part of a clinical audit (retrospective chart review using an anonymised dataset) not requiring approval from an ethics committee beyond institutional clearance from the University of Milano-Bicocca. Our analysis included de-identified data from individuals aged 12 to 72 months, all of whom had a confirmed diagnosis of ASD (F84.0) as per DSM-5-TR criteria operationalised according to the Autism Diagnostic Observation Schedule (2nd edition), along with an assessment of the severity level based on DSM-5-TR specifiers. The severity of ASD was categorised as follows: level 1, indicating lower ASD severity necessitating some support; level 2, indicating moderate ASD severity requiring substantial support; and level 3, indicating higher ASD severity requiring significant support. The categorisation of the severity level matched the description detailed in the DSM-5-TR. All diagnoses were confirmed and severity levels determined by experienced clinicians based at the two specialist centres. Individuals with other diagnoses or with incomplete data were excluded from our analysis.

In addition to the diagnosis and severity level, we systematically collected the following variables: gender assigned at birth, age at the time of assessment, place of birth, migration status, and geographical area of origin. Immigrant status was attributed to both individuals born in Italy to parents of non-Italian heritage who had previously immigrated to Italy and individuals born outside Italy to parents of non-Italian heritage who had subsequently immigrated to Italy.

Statistical analyses were performed using IBM SPSS Statistics v26, and we evaluated differences in frequencies using the Chi-Square test for dichotomous variables and the Mann-Whitney U-test for ordinal variables such as ASD severity levels, which were not normally distributed. Each study group was subsequently subdivided into three subgroups according to the age at first medical appointment for suspected ASD (20–39 months; 40–59 months; >60 months). Since the subgroups had approximately normally distributed continuous data, one-way ANOVA tests were used to assess the effect of migration status on the age at first medical appointment for suspected ASD. Accordingly, the strength of the association between these two variables was measured using Pearson's correlation coefficient.

RESULTS

Initially, we identified a total of 253 individuals who had received a confirmed diagnosis of ASD. Among these individuals, 25 were excluded because they did not meet the DSM-5-TR criteria for ASD. An additional 44 individuals were excluded from our analysis due to incomplete documentation. Consequently, our analysis included data from 184 individuals, of whom 138 were males, making up 75.0% of the sample. In terms of the severity of ASD symptoms, our clinical sample consisted of 27 individuals (14.7%) with level 1 ASD, 81 individuals (44.0%) with level 2 ASD, and 76 individuals (41.3%) with level 3 ASD. There were no statistically significant differences in the severity of ASD between males and females within the entire study population (z = 0.10; p = 0.920).

Regarding migration status, we categorized 99 individuals as immigrants, of whom 74 were males, accounting for 74.7% of this group. The remaining 85 individuals were classified as non-immigrants, with 64 being males, making up 75.3% of this group. Among the immigrant individuals, their geographical origins were distributed as follows: 28 (28.3%) individuals from Asia, 25 (25.3%) from Africa, 22 (22.2%) from South America, and 22 (22.2%) from Eastern Europe. Additionally, two individuals (2.0%) had complete data, but lacked specification of their geographical origin. Immigrant children were significantly more likely to have higher severity levels of ASD compared to non-immigrant children. Specifically, in the immigrant category, 5 individuals (5.1%) received a diagnosis of level 1 ASD, 46 (46.5%) had level 2 ASD, and 48 (48.5%) had level 3 ASD. In contrast, among the non-immigrants, 22 (25.9%) were diagnosed with level 1 ASD, 35 (41.2%) with level 2 ASD, and 28 (32.9%) with level 3 ASD. The difference in the severity of ASD between the immigrant and non-immigrant groups was statistically significant (X^2 = 16.32; p < 0.001). However, there were no statistically significant variations in ASD severity between males and females in both the immigrant group (z = 1.50; p = 0.134) and the non-immigrant group (z = 1.34; p = 0.180).

Immigrants accessed specialist assessment at an earlier age (40.1 months) compared to non-immigrants (44.6 months) (Figure 1).

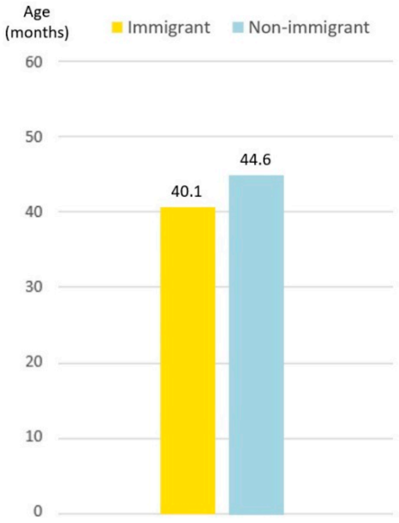

Figure 1. Mean age at first medical appointment for suspected autism spectrum disorder (ASD) in immigrant children (n = 99) versus non-immigrant children (n = 85).

Specifically, the vast majority of immigrants had their first medical appointment at <60 months of age, with only 8 out of 99 individuals (8.1%) accessing a specialist assessment at >60 months of age. Conversely, 24 out of 85 non-immigrants (28.2%) had their first medical appointment at >60 months of age. The distribution of age at first medical appointment for suspected ASD by migration status is shown in Figure 2. One-way ANOVA confirmed that the age difference at the time of accessing specialist assessment was statistically significant (F = 3.97; p = 0.048). The significance of the negative correlation between migration status and age at first medical appointment for suspected ASD was confirmed by a Pearson's Correlation Coefficient of −0.146 (p = 0.048).

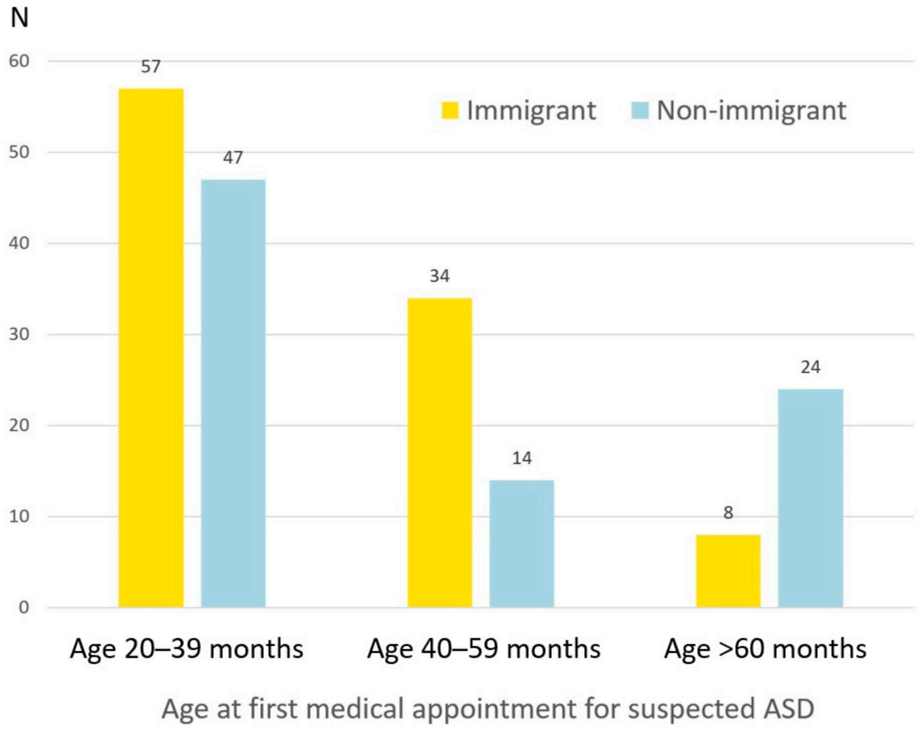

Figure 2. Subgroups by age at first medical appointment for suspected autism spectrum disorder (ASD) in the clinical sample (n = 184).

DISCUSSION

We assessed the relationship between migration status and age at first medical appointment for suspected ASD by retrospectively reviewing the medical records of children with ASD at two specialist centres in Northern Italy. Immigrant children were significantly more likely to have higher severity levels of ASD compared to non-immigrant children. Moreover, our data showed that immigrants access specialist assessment at an earlier age compared to non-immigrants, in line with previous results. Data on 1132 cases and 4515 matched controls from Finnish national registers showed that the average age at diagnosis of ASD in children of immigrant parents was 3.8 years, compared to an average age of 5.6 years in non-immigrants [3]. Likewise, in a study conducted in south London boroughs, Black immigrants were found to be diagnosed with ASD at a much earlier age compared to both other immigrants and non-immigrants. This finding was thought to result from the high concentration of Black male immigrants with severe ASD in that borough [7].

It is possible that the immigrant group in our study had an earlier age at first medical appointment for suspected ASD because of the significantly lower prevalence of less severe (level 1) ASD compared to the non-immigrant group. It has been observed that the age at diagnosis is significantly lower for children with severe ASD compared with those with high-functioning ASD, which is characterised by milder symptoms [4]. The lower prevalence of high-functioning ASD in the immigrant population has been related to environmental and cultural factors. The social and communicative difficulties of immigrants with high-functioning ASD, in the absence of intellectual disability, could be erroneously attributed to cultural and language differences [2,8]. Cultural differences in emotional processes (such as increased motivation to suppress emotions in interdependent cultures) have been shown to influence the expression of challenging behaviours in children with neurodevelopmental conditions [9]. Additionally, migrant parents may not seek medical or psychiatric help unless their children presented with overt developmental delay [8], possibly because of the related stigma and/or lack of awareness of existing support services [10,11]. It has been consistently shown that parents of different cultures often hold independent attitudes towards what they consider normal or abnormal behaviour in their children [2,12]. Overall, culture-dependent perceptions often result in a reduced need for healthcare support [6], contributing to the underutilization of mental health services for a range of neurodevelopmental conditions, including high-functioning ASD [5,13].

Specifically, mental health problems are often perceived differently in immigrant communities compared to physical health problems in other cultures; disorders like ASD may be attributed to punishment for sins, loss of faith in religion, or karma [14]. This differing cultural perception can increase the fear of stigma associated with seeking mental health services, contributing to their underutilisation [13]. Differences in help-seeking behaviours and cultural perspectives on mental health care contribute to variations in the perception of need for mental health care in immigrants to Western countries. For instance, it has been shown that non-Western immigrants tend to perceive less need for mental health care compared to ethnic Dutch residents [11]. A preference to solve problems independently or seek alternative resources within their own community or country of origin may also represent a barrier to healthcare utilisation by immigrant families. An ethnographic fieldwork conducted across homes and communities in the United States found that South Asian Muslim families can view the task of raising a child with ASD through a religious lens and strive to raise their child as normally as possible without relying on professional assistance [15]. Finally, difficulties with access to healthcare due to socioeconomic factors might have acted synergistically with language barriers and cultural perceptions to contribute to the observed differences between the immigrant population and the non-immigrant group.

When interpreting the findings of this study, it is important to take a few limitations into account. We acknowledge the restricted sample size, particularly in the context of the female population. Moreover, the study was conducted exclusively within specialised clinics subject to referral bias, which narrows the applicability of our results to a broader population. Finally, our research predominantly relied on a retrospective analysis of medical records, which inherently limits the scope of variables that could be investigated as potential predictors of ASD severity. For example, information regarding the reasons for immigration was absent from the medical records.

In our study, immigrant children were significantly more likely to have higher severity levels of ASD compared to non-immigrant children. Of note, immigrants access specialist assessment at an earlier age compared to non-immigrants, with implications about healthcare delivery. Specifically, mental health service providers should build on this evidence to develop assessment protocols that are sensitive to the early identification of ASD among immigrants and ethnic minorities. The intricate relationship between migration status and ASD needs to be fully elucidated by further research. Future studies should involve larger immigrant populations, monitor a broader range of migration-related factors, and employ prospective data collection methods in order to shed more light on care pathways for childhood ASD. Such data should guide the development of culture-sensitive interventions to facilitate social interaction, communication, and learning readiness, and to optimise the management of the most challenging behaviours [16]. Likewise, prospective data would provide key information to address the training needs of professionals working with immigrant children diagnosed with ASD and to inform policymakers [17]. Such endeavours would not only improve our understanding of the impact of the process of migration on the development and course of ASD, but also facilitate the development of more personalised care pathways for childhood ASD in different clinical populations.

ETHICAL STATEMENT

Ethics Approval

This study was conducted as part of a clinical audit (retrospective chart review using an anonymised dataset) not requiring approval from an ethics committee. Patient consent was waived due to the abovementioned reason (anonymised dataset).

Declaration of Helsinki STROBE Reporting Guideline

This study adhered to the Helsinki Declaration. The Strengthening the Reporting of Observational studies in Epidemiology (STROBE) reporting guideline was followed.

DATA AVAILABILITY

The anonymised study data are available from the authors upon reasonable request.

AUTHOR CONTRIBUTIONS

Conceptualization, AEC, CC and PS; Methodology, AEC, CC and PS; Software, CC; Validation, AEC, CC and PS; Formal Analysis, CC; Investigation, AEC, CC and PS; Resources, CC and PS; Data Curation, CC; Writing—Original Draft Preparation, CC; Writing—Review & Editing, AEC, CC and PS; Visualization, AEC and CC; Supervision, AEC; Project Administration, AEC and CC.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

ACKNOWLEDGMENTS

The authors wish to thank the following colleagues for their kind assistance with data collection: Silvia Alchieri, Sara Gabbiadini, Claudia Guuva, Erika Maffioletti, Michela Marzaroli, Nicoletta Paruta, Anna Polo Resmi, Donatella Fusari, Ombretta Giossi (ASST ‘Papa Giovanni XXIII’ Bergamo) and Mirella Marfone, Alessandra Provasoli (IRCCS ‘San Gerardo dei Tintori’, Monza).

REFERENCES

1. Zeidan J, Fombonne E, Scorah J, Ibrahim A, Durkin MS, Saxena S, et al. Global prevalence of autism: A systematic review update. Autism Res. 2022;15(5):778-90.
2. Kawa R, Saemundsen E, Lóa Jónsdóttir S, Hellendoorn A, Lemcke S, Canal-Bedia R, et al. European studies on prevalence and risk of autism spectrum disorders according to immigrant status: A review. Eur J Public Health. 2017;27(1):101-10.
3. Lehti V, Hinkka-Yli-Salomäki S, Cheslack-Postava K, Gissler M, Brown AS, Sourander A. The risk of childhood autism among second-generation migrants in Finland: A case-control study. BMC Pediatr. 2013;13:171.
4. van der Ven E, Termorshuizen F, Laan W, Breetvelt EJ, van Os J, Selten JP. An incidence study of diagnosed autism-spectrum disorders among immigrants to the Netherlands. Acta Psychiatr Scand. 2013;128:54-60.
5. Spinogatti F, Civenti G, Conti V, Lora A. Ethnic differences in the utilization of mental health services in Lombardy (Italy): An epidemiological analysis. Soc Psychiatry Psychiatr Epidemiol. 2015;50:59-65.

6. Franchi C, Baviera M, Sequi M, Cortesi L, Tettamanti M, Roncaglioni MC, et al. Comparison of health care resource utilization by immigrants versus native elderly people. J Immigr Minor Health. 2016;18:1-7.
7. Keen DV, Reid FD, Arnone D. Autism, ethnicity and maternal immigration. Br J Psychiatry. 2010;196:274-81.
8. Begeer S, Bouk SE, Boussaid W, Terwogt MM, Koot HM. Underdiagnosis and referral bias of autism in ethnic minorities. J Autism Dev Disord. 2009;39:142-8.
9. Chung JCY, Lowenthal R, Mevorach C, Paula CS, Teixeira MCTV, Woodcock KA. Cross-cultural comparison of the contexts associated with emotional outbursts. J Autism Dev Disord. 2023;53:4229-42.
10. Fassaert T, de Wit MA, Tuinebreijer WC, Verhoeff AP, Beekman AT, Dekker J. Perceived need for mental health care among non-western labour migrants. Soc Psychiatry Psychiatr Epidemiol. 2009;44:208-16.
11. Fassaert T, Hesselink AE, Verhoeff AP. Acculturation and use of health care services by Turkish and Moroccan migrants: A cross-sectional population-based study. BMC Public Health. 2009;9:332.
12. Blacher J, Cohen SR, Azad G. In the eye of the beholder: Reports of autism symptoms by Anglo and Latino mothers. Res Autism Spectr Dis. 2014;8:1648-56.
13. Thomas KC, Ellis AR, McLaurin C, Daniels J, Morrissey JP. Access to care for autism-related services. J Autism Dev Disord. 2007;7:1902-12.
14. Amri SB. Mental health help-seeking behaviors of Muslim immigrants in the United States: Overcoming social stigma and cultural mistrust. J Muslim Mental Health. 2012;7(1). doi: 10.3998/jmmh.10381607.0007.104
15. Jegatheesan B, Miller PJ, Fowler SA. Autism from a religious perspective: A study of parental beliefs in South Asian Muslim immigrant families. Focus Autism Other Dev Disabil. 2010;25:98-109.
16. Dumitru C, Ciobanu DE. Managing challenging behaviours in children with autism spectrum disorder. In: Syriopoulou-Delli CK, Folostina R, editors. Interventions for improving adaptive behaviors in children with autism spectrum disorders. Hershey (US): Information Science Reference/IGI Global; 2021. p. 126-43.
17. Folostina R, Dumitru C, Iacob CI, Syriopoulou-Delli CK. Mapping knowledge and training needs in teachers working with students with autism spectrum disorder: A comparative cross-sectional investigation. Sustainability. 2022;14(5):2986.

How to cite this article:
Centomo C, Stoppa P, Cavanna AE. Migration Status and Age at Assessment for Suspected Autism Spectrum Disorder at Two Specialist Centres in Northern Italy. J Psychiatry Brain Sci. 2024;9:e240012. https://doi.org/10.20900/jpbs.20240012