



Teacher education is a deeply pedagogical process rooted in values, ethics, and the social purpose of schooling. Globally, it sits at the core of educational quality and fairness, as research in comparative and international education demonstrates: the training of teachers directly influences students' learning chances, social inclusion, and the democratic aims of schools. Teachers are not simply transmitters of curricula, but active professionals whose convictions, reflective skills, and ability to manage the complexities of classroom life give shape and substance to the educational experience itself.

The pedagogical dimension of teacher education frames teaching as a relational, context-aware, and ethically grounded profession rather than just a set of procedural skills. From a research perspective, this demands robust research methodologies that can critically examine the complex realities of schools and inform evidence-based policies. Equally important is the connection between theory and practice, which helps to bridge the persistent gap between universities and schools.

The contributions gathered in this volume reflect the richness and diversity of experiences showcased during the ATEE Spring Conference 2024, held at the University of Bergamo from May 29 to June 1, 2024. The volume presents 70 selected papers out of more than 300 presented by researchers representing over 40 countries.

This broad spectrum of studies highlights promising directions that can inspire renewed inquiry and concrete proposals aimed at improving contemporary educational systems.

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ATEE Spring Conference 2024

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Teacher education research in Europe: trends, challenges, practices and perspectives

May 29th – June 1st, 2024
S. Agostino, Bergamo



Edited by Nicole Bianquin and Francesco Magni





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BOOK OF PROCEEDINGS

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Well-Being and Social Participation of Autism Spectrum Disorder Students at University: the impact of Atypia Friendly Inclusion Program

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Abstract

Transition from secondary to higher education remains particularly difficult for students with Autism Spectrum Disorder (ASD). We wished to understand the difficulties encountered by autistic students, exploring well-being and social participation. A total of 25 autistic students took part in this study, divided into 2 groups: supported or not by Atypie Friendly program. No significant difference was observed between the 2 groups. Then we matched autistic students supported by the program with a third group of students with attention deficit hyperactivity disorder (ADHD). The results indicate significant differences in terms of wellbeing and social participation. These results therefore indicate specific characteristics among autistic students, which need to be taken into account to succeed at university.

Keywords: Autism Spectrum Disorder; well being; social participation; university inclusion program.

1. Introduction

In France, the law of February 2005 on equal rights and opportunities, involvement and citizenship of disabled people and the law of 22 July 2013 on higher education and research have improved the inclusion of disabled children, from school to university. In addition, since 2005, three successive autism plans have targeted access to mainstream educational environment for autistic children and young autistic people¹ by recognizing their specific characteristics and providing suitable support. The French national autism strategy for 2018-2022 (Ministère du Travail, de la Solidarité et des Familles, 2018) confirmed this concern as being a national priority. In this context, the "Building an Aspie-Friendly University" project was developed, supported by the French National Research Agency, as part of the new university curricula. At the request of the French government, which funds the program and developed a new political strategy for 2023-2027 named "for the neurodevelopmental disorders", the program was renamed *Atypie Friendly* in 2023 to reflect the atypical nature of autism spectrum disorders, as well as other neurodevelopmental disorders which it is planned to support more and more in the future, such as ADHD and developmental coordination disorders.

The transition from secondary school to higher education can be particularly difficult for any young adult starting university. This transition requires a significant adjustment process, both on an academic and personal level (Prymachuk et al., 2019). This explains the need for a program such as *Atypie Friendly*, for which we are reporting an increase in the number of students requesting support during the 2022-2023 academic year. Previous studies have highlighted the academic and social challenges faced by autistic students in higher education. Success in higher education requires more than just academic skills; being a student also requires communication and interaction skills (Adolfsson and Simmeborn Fleischer, 2015). This is all the more difficult for autistic students, who lack these skills (Schall, et al., 2012). For instance, Gurbuz et al. (2019), compared the results of 26 autistic students with 158 non-autistic students with a 57-item questionnaire created and validated specifically for the study. Autistic students showed lower scores on both the social and academic components of the questionnaire. However, the limitations highlighted a significant difference in the number of autistic and non-autistic participants, as well as a difference in the sex-ratio, and the use of self-reported measures rather than direct, objective measures. These studies were conducted in Sweden and the UK respectively. More broadly, research in other European countries has highlighted similar challenges faced by autistic students in accessing higher education, though the inclusion policies and available support programs differ widely (Hees, Moyson, & Roeyers, 2015 in Belgium). Similarly, research from USA focusing specifically on students with ADHD has highlighted challenges related to time management, emotional regulation, academic organization, self-esteem and social skills (Shaw-Zirt, Popali-Lehane, Chapin & Bergman, 2005; Meaux, Green & Broussard., 2009)

These difficulties are barriers that must be overcome. However, the specific characteristics of ASD can also represent strengths, which may support academic success when adequately valued and supported. Autistic students can demonstrate a resolute attitude when solving important problems and exhibit significant attentive abilities, as long as the subject is part of their narrow circle of interests.

This study is based on a conceptual framework that combines the social model of disability (Oliver, 1996; Oliver & Barnes, 2010; Oliver, 2013) and the Capability Approach (Sen, 1999; 2005). The social model of disability emphasizes that the obstacles experienced by autistic students are not solely related to their individual characteristics but are also the result of environmental, social, and institutional barriers. In this perspective, improving university inclusion requires adapting the environment and support systems to the specific needs of neurodivergent students. These theoretical models support our choice of indicators—quality of life, autonomy, well-being, social participation, and executive functioning—as key components of the university experience for autistic students.

¹ We have opted to use the term "autistic person" to refer to people with ASD in the text, thus reflecting the preferences of the autistic community (Kenny et al., 2016).

Figure 1 shows the typical pathway of a student with a disability in French universities. Actions implemented as part of the Atypie Friendly program are shown in orange, highlighting how they complement the existing services in universities. Starting with secondary education, in France there are some guidance counseling pre-entry orientations professionals who are familiar with the Atypie Friendly program and can introduce it to future students. The university student will then have to go through the Disability Service or Health Service, both of which are trained in autism by the program. At this point, the student must undergo a tailored « Needs Assessment Interview » for autistic students and a medical consultation. The Disability Service will propose accommodation that are more tailored for autistic students compared to what is provided for all students with specific needs. Lastly, the Atypie Friendly team assists in transmitting the elements to the pedagogical team, implements individual follow-up, offers training to raise awareness of the educational and administrative university environment, as well as possibly providing individualized support for the pedagogical team.

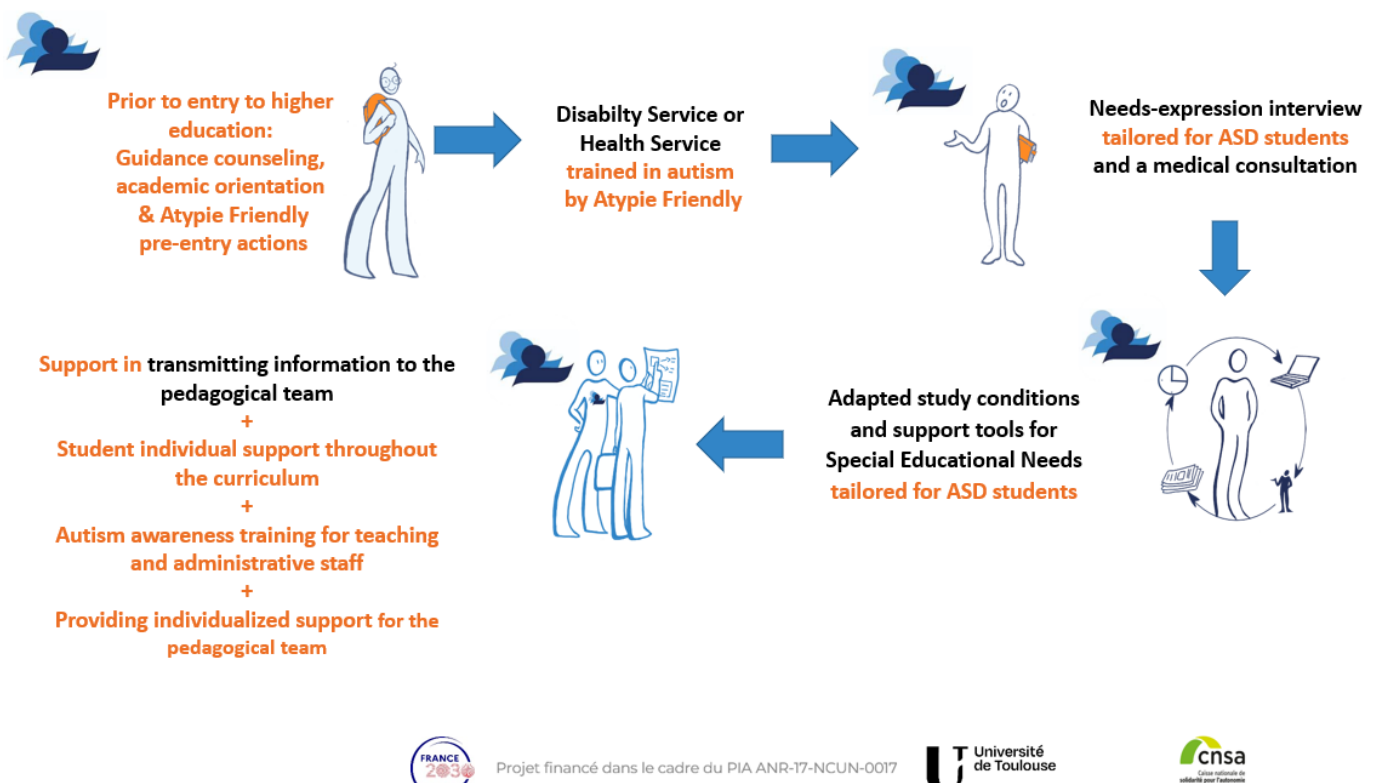


Figure 1: Schematic pathway of the students with a disability at French University.

N.B. Some actions implemented through the Atypie Friendly program are highlighted in orange

1.1 Design and aim and of the study

Most studies in this area are qualitative (i.e., interviews, open-ended questions, case studies and focus groups – Adolfsson et al., 2015 ; Anderson, 2014; Peña & Kocur, 2013 ; Van Hees, Roeyers, & De Pauw, 2015). Moreover, most studies were conducted in an English-speaking context, where the inclusion policy differs from France. While these qualitative studies have provided valuable insights into the lived experiences of neurodivergent students, there is a need for quantitative data to further explore the factors influencing their well-being and academic integration. Our study seeks to address this gap by adopting a quantitative methodology. We opted to replicate the quantitative methodology employed in the study by Gurbuz et al. (2019), incorporating more objective measures to evaluate variables identified in the literature as potentially influencing well-being and social participation—defined here as the activities undertaken by autistic students and students with another neurodevelopmental disorder, such as attention deficit hyperactivity disorder (ADHD), within the university setting. The aim of our study was to assess the impact of the Atypie Friendly program on

autistic students that are supported or not by the program, compared to students with another neurodevelopmental disorder: ADHD students. This will provide additional data to the literature to understand whether there are similarities and differences between different neurodevelopmental profiles in a university context in order to lay the foundations for inclusive and differentiated policy recommendations according to students' needs.

The present study explores the following research questions: 1) Does the Atypie Friendly program improve quality of life (QoL), well-being, autonomy, social participation, and executive functioning in autistic students? 2) Are there significant differences between autistic students (with or without support) and students with ADHD in these variables? These dimensions were selected because previous studies have shown their significant influence on the academic experience and success of neurodivergent students (Adolfsson & Simmeborn Fleischer, 2015; Gurbuz et al., 2019).

The study hypothesized that autistic students supported by the Atypie Friendly program would show higher well-being, autonomy, and social participation scores and lower executive functioning difficulties compared to those without support and to ADHD students. In this study, the ADHD group includes students with a diagnosis of Attention Deficit Hyperactivity Disorder, whether or not the hyperactivity component is predominant, in line with the current DSM-5 classification. No separate group of students with Attention Deficit Disorder (ADD) was included.

2. Method

2.1 Participants

A total of 125 students were contacted to participate in the study, of whom 34 responded, resulting in a response rate of 27%. A total of 34 participants aged 18 to 47 ($M = 26$; $SD = 7.27$), including 22 autistic students (with 8 males, 12 females, and 2 others), and 12 ADHD students (with 6 males, 5 females, and 1 other) were included in the research. Fifteen autistic students were supported by Atypie Friendly program and 7 autistic students were not. Participants were enrolled in a variety of university programs, including humanities, sciences, and social sciences. Psychiatric disorders, sensory disorders, motor disorders and students in their first year of study were non-inclusion criteria. Students with co-occurring ASD and ADHD were excluded to maintain distinct comparison groups.

2.2. Material

The participants completed a series of questionnaires: a socio-demographic questionnaire, quality of life (WEMWBS, Tennant et al., 2007), university autonomy questionnaire (CSEQ (College Student Experiences Questionnaire, Gonyea, Kish, Kuh, Muthiah & Thomas, 2003), as well as initiation and flexibility subscales of an inventory to assess executive behavior (BRIEF : Behavior Rating Inventory of Executive Functions, Roth, Isquith, & Gioia, 2005). Moreover, the university well-being questionnaire was adapted specifically as part of the study of the impact of the Atypie Friendly program. It is based on several tools, including the Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet, Dahlem, Zimet, and Farley, 1988) and Coopersmith's self-esteem inventory (Coopersmith, 1981). Finally, they complete a social participation questionnaire created by researchers and based on a literature review and on the results of interviews with non-disabled, disabled and autistic students about their experience and social life at university (Kruck, Dell'armi & Cilia, 2024). The questionnaires were administered online via a secure university platform. Data were anonymized and stored securely in compliance with the General Data Protection Regulation (GDPR). The study protocol was approved by the Ethics Committee for Non-Interventional Research (CERNI). All participants were informed about the objectives of the study and gave their informed consent before participating. Data were anonymized and stored securely in compliance with the General Data Protection Regulation (CERNI in French). The data were analyzed using descriptive statistics, t-tests and Mann-Whitney U tests to compare groups, and significance levels were set at $p < 0.05$.

3. Results: Comparing Means of autistic students with or without Atypie Friendly program support and ADHD students

Regarding quality of life, autistic students supported by Atypie Friendly program had a mean score of 80.4 (SD = 17.2), while autistic students without Atypie Friendly support had a slightly lower mean score (M = 75.4; SD = 17.3) as well as for ADHD (M = 73.7 ; SD = 17.9). However, the difference was not significant between autistic students' groups ($t(20) = -0.631, p=0.268$) and by comparing Atypie Friendly to ADHD students ($t(25) = 0.994, p=0.165$). Concerning well-being, despite a higher mean score of 66.3 (SD = 11.9), for autistic students with Atypie Friendly support compared to 58.0 (SD = 18.1) for those not on the program, there was no significant difference between autistic student groups ($t(20) = -1.28, p=0.107$). But Atypie Friendly autistic students have significantly higher scores on well-being ($t(25) = 2.14, p=0.021$) than ADHD students (M= 55.8; SD = 13.3). Furthermore, with regard to autonomy, autistic students supported by Atypie Friendly program had a mean score of 37.9 (SD = 9.59), whereas autistic students not benefiting from the program had a slightly higher mean score (M = 40.3; SD = 7.97) as well as ADHD (M = 35.9; SD = 8.81). Here again, the results were not significantly different between autistic student's groups ($U=42.5, p=0.771$) and by comparing Atypie Friendly to ADHD students ($U=76, p=0.255$). As for the assessment of executive behaviors, autistic students supported by Atypie Friendly had a mean score of 27.9 (SD = 3.29), which was slightly lower than other autistic students (M = 28.7; SD = 5.09). The results were not significantly different between these 2 groups ($t(20) = 0.473, p=0.679$). But Atypie Friendly autistic students have significantly lower scores on executive behaviors ($t(25) = -3.32, p=0.001$) than ADHD students (M = 32.6; SD = 4.1). The higher the score, the more difficulties the person has, so ADHD have more deficits in flexibility and initiation than autistic students. Finally, concerning social participation, the autistic students who did not benefit from Atypie Friendly (M = 24.7; SD = 9.91) and ADHD (students (M = 24.8; SD = 13.8) had a higher mean score than the autistic students supported by Atypie Friendly (M = 17.9 ; SD = 8.8). Despite a trend, this difference does not reach significance between autistic students groups ($t(20) = 1.61, p=0.061$) and by comparing Atypie Friendly to ADHD students ($t(25) = -1.58, p=0.006$). Finally, concerning all the variables, there is no difference between autistic students not supported by the program and ADHD students. The graphic representation of these results is given in Figure 2.

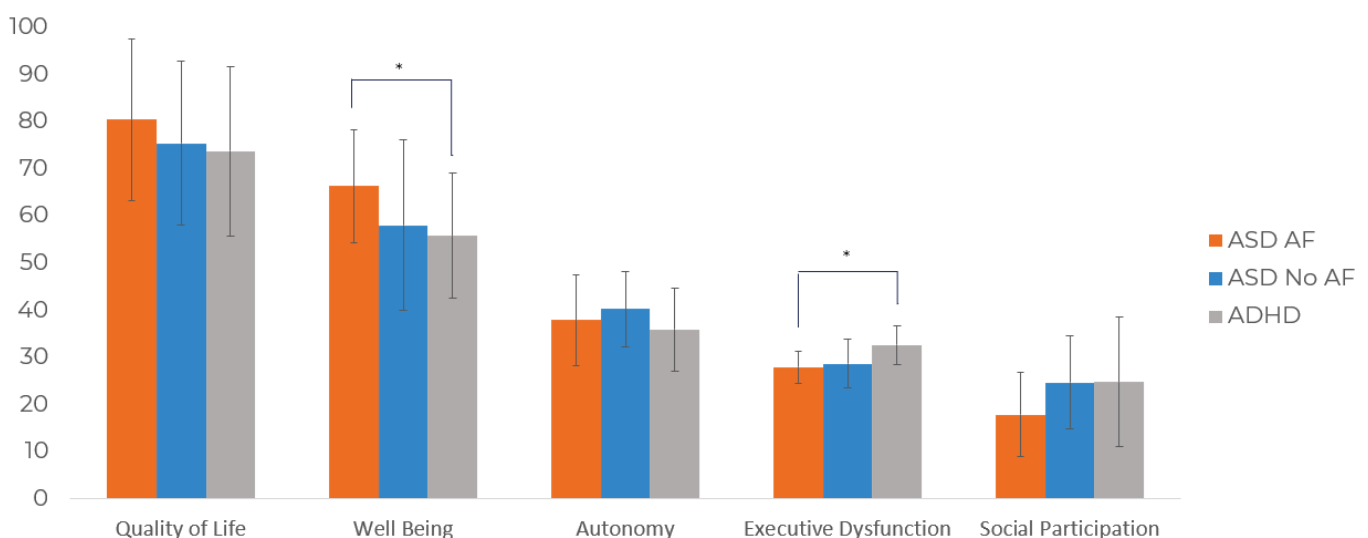


Figure 2: Mean comparisons of autistic students with or without Atypie Friendly program support and of ADHD Students.

N.B. ASD AF : autistic students supported by Atypie Friendly program ; ASD No AF: autistic students without Atypie Friendly program, ADHD: students with attention deficit/hyperactivity disorder
 * indicates a significant difference ($p < 0.05$) between ASD AF and ADHD

4. Discussion

The objective of our study was to assess the impact of the Atypie Friendly program on autistic students in higher education, compared to autistic students not supported by the program, and to examine whether their profiles differ from those of students with Attention Deficit Hyperactivity Disorder (ADHD). The French government has recently asked the program to extend its support to other neurodevelopmental disorders, but it is important to ask whether the challenges faced by autistic students are specific or shared with other neurodivergent populations. It was therefore necessary to assess whether the variables studied are influenced by common traits between these groups or by specific factors. In doing so, we remain aware that the comparison is not complete at this stage of the research and that variables are potentially confounded in this contrast between the students supported by Atypie Friendly, those who did not wish to be supported and those with ADHD, not yet supported but who will soon have the opportunity to do so through general or disorder-specific actions. In moving from a specific program for the inclusion of autistic students to all students with a neurodevelopmental disorder, we have to ask if similar interventions are adapted to this population or if their needs differ significantly. The dependent variables we choose to explore were quality of life, well-being, autonomy, executive behaviors and social participation. Contrary to our expectations, no significant differences were found on these measures between the two limited-size samples compared (15 autistic students supported or not by Atypie Friendly). A priori, there's no reason to believe that these groups have different characteristics, but this remains a point to be verified and the Atypie Friendly program may not play a big enough role in modifying these aspects. It should be emphasized that some measures are based on a perceived sense of support. Jennes-Coussens et al., (2006), did not find significant differences between a group of young autistic adults and a control group of typical students for perceived social support. As such, this result may indicate that when autistic students are asked directly, they do not mention a lower perception of social support, although they have more difficulty in socializing with others. However, in a study using parental questionnaires, the authors found lower social support among autistic students than among ADHD students (Elias & White, 2019). In our study, the comparison between autistic students benefiting from Atypie Friendly support and students with ADHD revealed a significant difference on two variables. First, autistic students supported by Atypie Friendly program had a significantly higher well-being score than ADHD students. Why is this? ADHD students may also benefit from adaptations, but their needs may sometimes be less well understood or taken into account, especially if their symptoms are perceived as behavioral problems rather than specific educational needs. ADHD students may also have more difficulty managing their emotions and impulses, which can lead to interpersonal conflicts and lower overall university well-being. But there is no difference between autistic students not supported by the program and ADHD students. We can therefore assume that Atypie Friendly offers social and academic support that improves the well-being autistic students who follow this program, as well as for all autistic students thanks to long-term work on autism at university. Future work on other neurodevelopmental disorders remains to be done to achieve the same effects.

A second notable difference relates to the higher executive difficulties reported by ADHD students than by autistic students. Executive dysfunctions are well known in ADHD. They are also frequently observed in autistic adults although with a certain heterogeneity (Demetriou et al., 2018) but are not part of the diagnosis. Results vary depending on whether they are assessed with neuropsychological direct testing, or with ecological scales of everyday behaviors such as BRIEF-A (Wallace et al., 2016). In the academic context, an assessment of executive functions is particularly relevant in order to identify the strengths and weaknesses of autistic students, to offer arrangements and support adapted to their profiles, and thus increase their chances of success in higher education. In our study, a self-reported scale was used and it may be the case that ADHD students have a better understanding and perception of this type of difficulties, than autistic students, who may not be able

to perceive them as clearly as their degree of social participation in activities with other people. In fact, self-report of social participation was not found to differ significantly between groups. It may be that Atypia Friendly program students do not enable autistic students to improve their social participation or that students on the program have no more difficulties than those who are not on it or those with ADHD. Executive and social variables are often linked, but the profiles of the most altered executive subcomponents are somewhat different in ADHD and ASD. Concerning our results, the type of support offered by the Atypia Friendly program may play a role (Cilia et al., 2024). For example, it may focus on specific aspects of learning or socialization, while neglecting executive functions. In this respect, although the difference is not significant, but a trend, it is notable in terms of the social participation reported by the 3 groups. Autistic students without Atypia Friendly and ADHD students rated their social participation more positively compared to autistic students with Atypia Friendly. ADHD students may have characteristics such as hyperactivity, impulsivity or inhibition deficits which facilitate social interactions in a more spontaneous way, leading them to initiate contacts and participate in activities, thus promoting their social participation. In this view, the stigmatization is certainly higher for autistic people and ADHD, and their participation suffers as a result. What's more, if we ask them, some of autistic students tell us that they don't want to form social links at university (Kruck, Dell'Armi, & Cilia., 2024).

4.1 Limitations

There are several limitations to be considered in this study. Firstly, the study was conducted on a limited sample of autistic and ADHD students. However, previous studies using a methodology similar to ours also had small samples of students with autism (n=26; Gurbuz et al., 2019), and on average the number of autistic students participating in similar studies is 16 (Anderson et al., 2017). Moreover, we were unable to verify the diagnosis of the participants, so it was self-reported. However, an autistic trait measurement (RAADS-14) was performed to ensure that the group of autistic students whose diagnosis was self-reported presented these characteristics, unlike the ADHD students. Some autistic students wanted to be part of the program, but the length of time they were included and took part in the program's activities varied from student to student. Other autistic students did not want any particular support, but we do not know the specific reasons for this. Finally, ADHD students are not yet part of the program, but will eventually be able to join. So there are confounded variables in our groups. We created a questionnaire for assessing social participation experience whose results were not significant here, but further studies should use a validated instrument for a better evaluation.

5. Conclusion

To conclude, this nationwide program has a number of objectives designed to improve access to higher education and success at university. We wanted to assess the aspects linked to the autonomy, well-being and social participation of students in French universities. At this stage of the research and on a still limited number of participants, our results are not in line with other studies on the impact of university inclusion programs. Locke et al (2023) highlighted progress in certain skills of students with autism, such as socialization, executive functioning and academic work, thanks to a mentoring program. Further work on larger samples is required to refine possible intra-group individual heterogeneity and to go beyond the methodological difficulties encountered. The academic experience of autistic students can be affected by the presence of the specific characteristics of ASD, and taking them into account is essential for improving their inclusion and academic success. The same consideration should be given to making the program equally accessible to all students with a neurodevelopmental disorder. It can therefore be observed that there is no point in forcing students into group social participation if they already find personal satisfaction in their university life. It's necessary to find the right balance between what is necessary for them in terms of social autonomy to be acquired for a future professional integration and personal well-being as a person, beyond their characteristics.

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