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RESEARCH ARTICLE **OPEN ACCESS**

Challenges Faced by Parents of Children with Down Syndrome in Mainstream Schools: Exploring Inclusive Education

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Abstract:

Introduction: Parents of children with Down syndrome encounter significant challenges throughout their children's educational journey, particularly within inclusive mainstream schools. This study aims to explore the specific obstacles faced by these parents in mainstream schools located in the Rabat-Salé-Kenitra province of the Kingdom of Morocco. By addressing the under-explored context of Morocco, this study provides new insights into the unique challenges faced by parents in this region.

Objective: The objective of this research is twofold: the first objective is to explore the impact of the child's age on the challenges faced by parents in the process of inclusive education for children with Down syndrome. The second objective is to examine the influence of the school level on these challenges, pinpointing specific issues at each stage.

Methods: This cross-sectional study was conducted at the Dysmorphology Service at the Children's Hospital of CHUIS Rabat, Morocco, over one year. The sample included 148 parents of children with Down syndrome aged 4 to 15 years. The study employed a structured questionnaire to assess both demographic factors (such as the age and educational level of the children) and the parents' perceptions of mainstream schooling, inclusive education, and the difficulties encountered. Statistical analyses, including one-way ANOVA and t-tests, indicated significant differences in the challenges faced by parents based on the age and school level of the children. Likewise, the ANOVA results showed significant disparities between age groups ($F(3) = 21.38$, $p < 0.05$), with parents of children aged 7-9 and 10-12 reporting more difficulties. Additionally, t-test results revealed significant differences between preschool and primary school levels ($t = -7.57$, $p < 0.05$), with primary school parents experiencing more challenges.

Results: The study highlights the necessity for continuous support and resources for parents and educators to ensure successful, inclusive education for children with Down syndrome. It also emphasizes the need for targeted strategies that account for the specific challenges at different educational stages. The research underscores the importance of adaptive educational strategies and effective collaboration between parents and teachers. It also calls for enhanced awareness and training programs to better equip educators to handle the specific needs of these children.

Conclusion: This research contributes to a deeper understanding of the persistent challenges in inclusive education for children with Down syndrome and offers actionable recommendations for improving support systems in the Moroccan context.

Keywords: Difficulties encountered, Down syndrome, Mainstream schools, Inclusive education, Parents' perception, Morocco.

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1. INTRODUCTION

The inclusion of children with Down syndrome in mainstream schools represents a major educational challenge on a global scale, particularly in developing countries such as Morocco, where infrastructures and educational policies struggle to meet the specific needs of this population [1, 2]. Although the concept of inclusive education is gaining popularity, its implementation remains complex, largely due to challenges related to social attitudes, educational infrastructures, and teacher training for accommodating children with special educational needs. In Morocco, the integration of children with Down syndrome into mainstream schools is particularly difficult despite recent initiatives aimed at promoting more inclusive education. In a Moroccan context, where resources to support students with disabilities are limited, the inclusion of children with Down syndrome presents unique challenges for families and teachers. Schools often lack the necessary accommodations [3-5], and teachers are not adequately trained to meet the specific needs of these children [6, 7]. Additionally, institutional and governmental support for children with disabilities remains insufficient, further complicating their integration into mainstream schools. Parents, in turn, often find themselves navigating an educational system that is not fully prepared to accommodate their children.

Children with disabilities, especially those with Down syndrome, face numerous challenges in their daily lives. These challenges extend beyond their physical and cognitive abilities and affect their educational journey as well. In Morocco, parents of children with Down syndrome encounter numerous difficulties during their children's inclusion in mainstream schools. This study aims to explore the challenges faced by these parents in mainstream schools in the Rabat-Salé-Kénitra region and to examine the potential effects of the child's age and educational level on these challenges. Several studies have examined the relationship between the age of children with Down syndrome variable and the difficulties encountered by their parents during their schooling. For instance, a study [8] found that children with Down syndrome who receive appropriate care from birth can relatively enjoy normal lives, free of stigma, while growing up like other children. Special people can overcome obstacles caused by genetic abnormalities with the right assistance. In other words, the more a child is accepted by his family and his community, the better he will flourish. Additionally, a study conducted by another study [9] shows that the majority (60%) attended primary school for at least three years; there is a greater likelihood that girls will stay there longer. However, by the age of thirteen, 17% were attending mainstream primary school, a higher estimate for children with DS who completed mainstream primary school due to lack of funds and teaching assistants' scarcity allocation to schools.

The level of education, including early childhood education and primary school, may also influence the difficulties faced by these parents. A few studies [10, 11] noticed that parents of children with Down syndrome face challenges in mainstream school settings, including navigating the education system and advocating for their child's needs and these challenges persist at different stages of their education, from early childhood to adolescence. Other studies [12, 13] show that the difficulty of integrating children with Down syndrome into early childhood education is due to the specific characteristics of the syndrome, notably material conditions and limited access to the best schools capable of caring for these children in a proper manner.

Inclusive education is an approach that aims to provide equal opportunities to all students, regardless of their abilities or disabilities [14-16] and by integrating them into ordinary classes [17, 18]. It promotes the idea that every child has the right to receive better quality education in a supportive and inclusive environment [19, 20]. However, implementing inclusive education for children with Down syndrome can be complex and demanding, requiring significant efforts from parents, educators and the education system as a whole [21, 22]. Although efforts have been made to promote inclusive education for children with disabilities [23], including children with Down syndrome [24], it is essential to examine the detailed difficulties encountered by parents when sending their children to mainstream schools. By understanding these challenges, appropriate interventions and support systems can be developed to improve the educational experience of children with disabilities, including children with Down syndrome in mainstream schools [6, 25]. In Morocco, few studies have explored in depth the specific challenges faced by parents of children with Down syndrome in the Moroccan context, particularly regarding the impact of the child's age and educational level on integration difficulties. Yet, it is crucial to

understand how these factors influence the experiences of both parents and children in order to propose concrete solutions. The limited available studies on the topic primarily focus on European or North American contexts, leaving a gap in the literature regarding Southern countries, particularly Morocco, where socio-economic and educational challenges differ significantly. This study aims to fill this gap by exploring the difficulties experienced by parents of children with Down syndrome in the Rabat-Salé-Kénitra region. Two main hypotheses guide this research:

1.1. Hypothesis 1: The Effect of the Child's Age on the Difficulties Encountered

The first hypothesis to explore is the effect of the child's age on the difficulties faced by parents. It is assumed that as the child grows older, some challenges may become more pronounced, or new difficulties may arise. Understanding the age-related issues will likely allow parents, educators, and policymakers to adjust their interventions and support systems accordingly. By identifying the specific needs of children at various stages of development, appropriate strategies can be implemented to effectively address these challenges.

1.2. Hypothesis 2: The Effect of the Child's Educational Level on the Difficulties Encountered

The second hypothesis to explore is the effect of the child's educational level on the difficulties faced by parents. It is assumed that as children with Down syndrome progress through various school levels, new challenges may emerge. For example, preschool children may face challenges related to sensory integration or basic academic skills, while primary school children may encounter difficulties in problem-solving, especially in mathematics.

These hypotheses are based on previous studies that have shown that a child's age and educational level are major determinants of inclusion difficulties in other contexts but have not yet been explored in the Moroccan context. By examining these factors within the specific context of Morocco, this study seeks to provide recommendations to improve the educational inclusion of children with Down syndrome. It aims to highlight unmet parental needs while emphasizing the importance of increased teacher training, the intersectoral collaboration between healthcare facilities and schools, as well as the creation of a stronger support framework for children with specific needs. Ultimately, this research contributes to advancing knowledge on inclusive education in Morocco while offering pathways for improving educational practices and public policies.

2. METHODOLOGY

This cross-sectional study was carried out at the Dysmorphology Unit of the Children's Hospital in Rabat, part of the Ibn Sina University Hospital Center, located in Rabat, Morocco. The research spanned from December 3, 2021, to December 31, 2022.

2.1. Sample Size

To calculate the sample size and ensure statistical representativeness, it was estimated that around 240 children with Down syndrome, aged 4 to 15 years, visited the unit every Thursday in 2022. With a confidence level of 95% and a margin of error of 5%, the target sample size for parents of children with Down syndrome was determined to be 148.

2.2. Participants

The study involved one parent per child with Down syndrome attending the unit. A total of 148 parents participated in the study. The recruitment process involved (insert recruitment method: *e.g.*, convenience sampling, random sampling), ensuring that participants met the inclusion criteria. The inclusion criteria specified that participants must reside in the Rabat, Salé, or Kenitra regions and have a child with Down syndrome aged between 4 and 15 years, regardless of socio-economic background. Exclusion criteria included refusal to participate, previous involvement in the survey, residency outside the designated regions, and having a child under 4 or over 15 years of age. The sampling method was chosen to ensure accessibility while maintaining the representativeness of the sample for the study's objectives.

2.3. Data Collection Procedure

Data were collected using a questionnaire designed to gather demographic information about the parents and children, including their ages, educational levels, and the severity of cognitive and language challenges, as reported by the parents. The questionnaire also addressed perceptions regarding school and social inclusion. Originally developed for a different study by Hasnaa Hayek on the school integration of children with disabilities, the questionnaire was adapted to focus on Down syndrome for this research.

The questionnaire underwent modifications after a thorough assessment of its suitability for the target population. It was translated into Arabic to ensure it was culturally and linguistically appropriate. A pretest with 42 parents was conducted to assess the clarity, comprehensibility, and relevance of the modified questionnaire. The pretest results yielded a Cronbach's alpha of 0.75, indicating good internal consistency. These adjustments ensured that the questionnaire effectively captured the experiences and perspectives of parents with children diagnosed with Down syndrome.

2.4. Statistical Analysis

Descriptive and comparative statistical analyses were conducted using SPSS 25 software. The choice of statistical tests was made based on the research objectives and data characteristics. The impact of the child's age on parental difficulties was examined using a one-way analysis of variance (ANOVA), followed by post-hoc tests to identify significant differences between groups. Additionally, a comparative analysis of the means between

groups was performed using the t-test for independent samples, which allowed for the comparison of groups representing different educational levels of the children.

Before conducting the analyses, the underlying assumptions for both tests were verified. The normality of the data was assessed using graphical methods (histograms, boxplots) and statistical tests (Shapiro-Wilk test). The comparison of variances between groups was conducted using Levene's test to check for homogeneity of variances. For the t-test, we also verified that the variances between the groups were equal. This thorough examination of assumptions ensured the validity of the statistical tests and the robustness of the results.

The main difficulties identified by parents included: lack of listening by teachers, absence of teacher training, insufficient training for Special Education Assistants (AVS), lack or insufficiency of assistance, overcrowded classrooms, difficulties in relationships with other students or their parents, pedagogy not suited to the specific needs of the child, inadequate facilities, and difficulties in explaining the child's situation. A global difficulty score was calculated by assigning a value of 1 to “yes” responses and 0 to “no” responses for each of the 9 difficulty variables. The maximum score was 9, representing the presence of all difficulties assessed, while the minimum score was 0, indicating the absence of all the mentioned difficulties.

2.4.1. Choice of Statistical Tests and Hypotheses

The selected statistical tests (ANOVA and t-test) were chosen based on their relevance for comparing means between different groups. ANOVA was used to analyze the effect of the child's age (a categorical variable) on the difficulties encountered by parents, while the t-test was used to compare the means of groups representing the different educational levels of the children (kindergarten *vs*. primary school). Before conducting these tests, the underlying assumptions were verified. The normality of the data was assessed using graphical methods (histograms, boxplots) and statistical tests (Shapiro-Wilk test). The comparison of variances between groups was conducted using Levene's test to check for homogeneity of variances. For the t-test, we also verified that the variances between the groups were equal.

2.4.2. Effect Size

To better understand the practical significance of the results, we calculated the effect sizes:

For the ANOVA, the effect size was measured using partial Eta squared (η^2), with an η^2 of 0.504, indicating a large effect size for the differences according to the children's age.

For the t-tests, Cohen's d was used to assess the magnitude of differences between groups. A value of d = 2.37 was obtained, indicating a large difference between the difficulties encountered by the parents of preschool and primary school children.

2.5. Ethical Considerations

Parents of children with Down syndrome were given a detailed explanation of the study's objectives along with an informed consent form. They were assured that their responses would be kept confidential. The study was approved by the Ethics Committee of the Faculty of Medicine. The informed consent process was carefully explained to participants, ensuring their understanding and voluntary participation. All procedures followed the ethical guidelines established by the 1964 Helsinki Declaration (revised in 2000), ensuring that informed consent, anonymity, and confidentiality were maintained for all participants. The study also took extra measures to ensure participants’ confidentiality, including data anonymization and secure storage.

3. RESULT

According to the data presented in Table **1**, the average age of children with Down syndrome is 10 years. The majority of children included in the study (31.1%) are of primary school age (10 to 12 years), followed by 27.7% in the age group of 13 to 15 years. Then, 23% of children are between 7 and 9 years old, and finally, 18.2% are in the age range of 4 to 6 years old, for the educational level of children with Down syndrome.

During the study, it was observed that 91.9% of parents with children who have had Down syndrome since birth seek assistance from associations. They do so by consulting a pediatrician in the dysmorphic department at the children's hospital to ensure their children receive comprehensive care, including pediatric psycho-monitoring, rehabilitation, psychomotor skills training, and speech therapy. The success of these efforts hinges on the cooperation and collaboration between various partners, including the Ministry of Health, educational institutions, and associations. Conversely, the remaining 8.1% of parents who have not reached out to the center or an association face challenges such as transportation difficulties, lack of resources, and unawareness of the importance of educating a child with a disability.

In the survey, 36.9% of families reported having to change their child's school location. Almost one-third of parents (30.1%) indicated that their child's abilities had not been developed in their previous schools. Additionally, 24.1% of parents mentioned that inadequate care in specialized institutions discourages integration.

Furthermore, 19.3% of parents changed schools due to relocation, 18.1% due to a lack of understanding from teachers in regular schools, and 8.4% due to a decline in their child's physical and/or intellectual abilities.

A significant portion of the sample, 69.5%, benefits from special arrangements to facilitate schooling. Among these, the majority of integrated children (33.1%) benefit from adjustments in school schedules, such as class entry or exit times. Additionally, 29.1% of children have benefited from the development of teaching practices tailored to specific learning needs.

Table 1. Summary of main demographic characteristics.

Variable		N=148, %
Age of the child with Down syndrome	4-6	18.2
	7-9	23.0
	10-12	31.1
	13-15	27.7
The school level of children with Down syndrome	Pre-school	21.1
	Primary school	78.9
Contact a Center or Association for the guidance of children with Down syndrome	Yes	91.9
	No	8.1
Change of school	Yes	36.9
	No	63.1
Reasons for changing school	Inadequate care in specialized establishments	24.1
	No development in his abilities	30.1
	Decrease in one's abilities (physical and/or intellectual).	8.4
	Lack of understanding on the part of the teacher in ordinary school	18.1
	Family moving	19.3
Arrangements to facilitate schooling	Arrangement of school rhythms (class entry or exit times, for example)	33.1
	Teaching practices adapted to specific learning needs	29.1
	My child does not benefit from any special measures in the classroom; he does not need them	3.3
	My child does not benefit from any special measures in the class, but it would be necessary for him to have some	27.2
Difficulties encountered in the schooling of children with Down syndrome	Yes	60.9
	No	39.1
Difficulties encountered at regular school	Lack of listening from teachers	13.6
	Lack of teacher training	14.6
	Lack of training for AVS	12.7
	Insufficient or absent support	19.2
	Overcrowded classes	7.5
	Difficulties with other students or their parents	4.5
	Teaching unsuitable for your child’s specific needs	11.7
	Unsuitable premises	7.5
	Your own difficulties in explaining your child's situation	8.8

However, 27% of children do not receive these benefits, and parents believe that such accommodations are necessary for their children.

Rental planning represents 7.3% andonly 3.3% of them do not need special measures.

13.6% of parents mention a lack of listening from teachers who welcome children into their classes. About 14.6% of parents also highlight the lack of training for teachers on Down syndrome. Likewise, 12.7% of parents note the lack of training for AVS. Several parents indicate that according to them, the teachers had no awareness of the suffering that the child had to overcome. Sometimes the school seems unsuitable and completely incapable of handling this type of disorder. This encourages parents to work as teacher trainers on how to behave. Furthermore, parents emphasize another difficulty linked to the AVS profession.

11.7% of parents surveyed believe that the teaching is not suitable and that the school system is moving much too quickly for their children. They add the lack of suitable facilities and necessary school materials such as visual supports. The lack of appropriate support is indicated by 19.2% of respondents. About 7.5% mention difficulties linked to overcrowded classes where the teacher has to deal with many students. This can lead to neglecting the child with Down syndrome. Some parents (4.5%) draw attention to the difficulties linked to being with other students in the class. They express the importance of explaining Down syndrome to other children in order to better accept their children's invisible and visible differences. Unsuitable premises7.5% and 8.8% represent difficulties in explaining the child's situation.

Some parents highlighted a major difficulty, which they consider to be the lack of will on the part of teachers. They report a lack of motivation among certain educators with regard to welcoming children with Down syndrome. Some parents affirm that, in certain cases, the teacher seems to welcome their child in an obligatory manner without showing real enthusiasm. As a result, these parents report that the teacher relegates the child to the back of the class and makes no special effort to care for him. In one specific case, the integration of a child failed due to the teacher's lack of attention to the child's particular situation and the failure to implement the requested accommodations.

The effect of the child's age on the difficulties faced by parents:

We assumed that parents were encountering difficulties in their child's school career; our results confirm this (60.9% of parents during the study reporting this).

We, therefore studied the effect of the child's age on the parents' difficulties using a one-way ANOVA, then we applied the Post hoc Test.

According to Table **2**: There is a significant disparity between age cohorts, specifically between the “4-6 years” and “7-9 years” groups, as well as between the “7-9 years” and both “10-12 years” and “13-15 years” ($F(3) = 21.38$; $p < 0.05$). This observation suggests that parents of older children appear to face more difficulties. This trend can probably be attributed to the fact that this phase coincides with the age when the adolescent must make crucial decisions such as choosing an orientation, preparing for professional training or engaging in university studies, and making career choices to consider their future integration into society.

Table 2. The average difficulties of parents according to the age of the child.

Age of Child with Down Syndrome	Average	Effective	Standard Deviation	Maximum Score
4-6	3	3	.00	3.00
7-9	8	17	2.26	9.00
10-12	3.47	30	1.7	7.00
13-15	3.47	17	2.43	7.00

In addition, we observe that parents' difficulties are also significant when children are between “7 and 9 years old”. This period corresponds to the time when children should be enrolled in elementary school, and parents can sometimes face challenges in ensuring this integration. The two age groups during which parents' difficulties seem to be the most marked, therefore, coincide with critical phases of educational orientation.

The effect size calculated for the ANOVA is 0.504, indicating a strong influence of age on the difficulties encountered by parents. This shows that the differences observed between the age groups are not only statistically significant but also practically meaningful.

The challenges faced by parents in relation to their children's schooling are conditioned by several factors, including:

- The evolution of the child's age: parents encounter more difficulties as their child grows.
- The importance, both qualitative and quantitative, of adapting pedagogy to the specific needs of the child.
- The level of training of teachers and their knowledge regarding Down syndrome as well as the child's disability, including the preparation of school assistants (AVS).
- The teacher's motivation to welcome the presence of a student with Down syndrome in his class.

The effect of educational level on the difficulties encountered by parents:

We carried out a comparative analysis of the means using the t-test for two independent samples, representing the “Kindergarten” and “Primary” groups, respectively. The results reveal a significant difference between the means of the two groups (1.76 and 5.89, respectively), with a t-test statistic of -7.57 ($p < 0.05$) for 65 degrees of freedom and the effect size (Cohen's $d = 2.37$) indicates a large difference between the groups. This means that parents of children in primary school face significantly greater difficulties, which could be related to increased expectations regarding academic performance and unmet needs for educational adaptations.

This finding indicates that parents of children at the primary level experience more difficulties than those with children in kindergarten. This disparity can be attributed to the increasing complexity of school learning as students transition to higher levels, where understanding certain subjects becomes a real challenge for young people with Down syndrome, particularly due to the abstract nature of the cognitive demands. During this period, parents express heightened concern about their child’s educational and professional future.

These results clearly demonstrate that parents of children with Down syndrome face greater challenges at certain critical stages of schooling, particularly during the transition to primary school. The large effect sizes observed indicate that these differences are not merely due to chance but have practical significance. This highlights the importance of providing targeted support, such as educational accommodations and enhanced teacher training, during the primary school years.

4. DISCUSSION

By exploring the many challenges parents face when accompanying their children with Special needs in their school career, it is obvious that dynamics within educational environments play a crucial role. The coexistence of different perspectives, while enriching in theory, often results in practical challenges. The inability to reconcile these views may unintentionally hinder the smooth integration of children into educational settings. Recognizing the diversity of stakeholders involved, ranging from parents to educators to health professionals, it becomes imperative to foster collaborative approaches that not only accommodate divergent opinions but also respect the unique sensitivities of each participant. Establishing consensus regarding fundamental approaches to welcoming children into classrooms, followed by personalized adjustments based on the specific nature of their challenges and developmental goals, could pave the way for more effective educational practices.

Furthermore, our study shows the school experiences of children with Down syndrome by highlighting the complex network of difficulties encountered by their parents. These results align with previous research, such as the work of [26-31], which emphasizes the importance of individualized support and environmental adaptations to facilitate integration. Likewise, the observations drawn from the study of [32-34] resonate with our findings

regarding the evolving challenges faced by parents of adolescents with Down syndrome. This convergence highlights the enduring nature of these obstacles across different developmental stages.

By focusing specifically on children with Down syndrome, our research provides nuanced perspectives on the obstacles parents face throughout their educational journey. These results partly echo the conclusions drawn from previous studies, which have also highlighted the barriers to the educational inclusion of children with Down syndrome. Notably, the study [35, 36] highlighted the struggles associated with enrolling in mainstream schools and the increased need for justification, particularly for children who have previously attended specialist settings.

Additionally, our analysis reveals persistent gaps within the education system, including a lack of responsive teachers and insufficient accommodations for children with special needs. These results echo the findings of previous studies, which have also highlighted the challenges of understanding and accepting diversity within schools. For example, studies [37-43] highlighted the crucial role of awareness-raising and teacher training in promoting the inclusion of children with Down syndrome in mainstream schools.

It is important to acknowledge certain limitations of our study. First, our sample is limited to a specific region (Rabat-Salé-Kénitra), which may restrict the generalizability of our findings to other regions of Morocco or different contexts. Additionally, our data collection instrument, while suitable for our objectives, presents certain constraints. For instance, it does not allow for an in-depth exploration of the psychological impact of inclusion on children or the dynamics of peer interactions, which could have provided a more comprehensive understanding of the integration processes.

Our study contributes to enhancing the understanding of the challenges faced by parents of children with Down syndrome in the context of mainstream schooling. The findings highlight the need to strengthen collaboration among the various stakeholders involved in inclusion and to promote continuous training for teachers to improve their ability to meet the needs of children with Down syndrome. For future research, it would be relevant to explore other variables, such as teachers' attitudes toward inclusion or the impact of local educational policies on inclusion. Furthermore, longitudinal studies would be beneficial to track the evolution of inclusion over time and across different stages of the educational journey.

CONCLUSION

This study explored the challenges faced by parents of children with Down syndrome in the context of their schooling in regular schools, specifically in the region of Rabat, Salé, and Kénitra. Two main hypotheses were tested: the impact of the child's age and the effect of their educational level on the difficulties experienced by parents. The results reveal that the age of children with Down syndrome plays a significant role in the challenges faced by parents. Indeed, parents of older children report more difficulties than those with younger children. This suggests that the support needs of children evolve over time, requiring more personalized and enhanced support as they grow. It is crucial for educators and policymakers to take into account this evolution in needs and adjust resources and strategies to ensure successful and sustainable integration of these children into regular education. Moreover, the child's educational level also influences the challenges faced by parents. Parents of children in kindergarten experience fewer difficulties than those of children in primary school. This finding indicates that as children progress in their schooling, the challenges related to integration into an inclusive education system become more pronounced. This underscores the importance of continuous care, tailored to each stage of the child's educational journey.

To facilitate the integration of children with Down syndrome, several recommendations can be considered. First, targeted pedagogical adaptations, based on the child's educational level, would be beneficial. Individualized learning plans and differentiated teaching methods could address the specific needs of these children. Additionally, close collaboration between parents and teachers is essential to ensure effective communication and adjust educational practices to meet the child's needs. Parents may also face emotional challenges throughout their child's schooling. In this context, ongoing psychological support, both for parents and children, could enhance the overall educational experience. Schools must also provide support services for parents, including training programs to help them better support their children's integration into school. For adolescents with Down syndrome, effective transition strategies, including active parental involvement in school planning and access to adapted educational programs, are crucial. Providing additional resources, such as specialized educational services, extracurricular activities, and parent support groups, can also facilitate these children's integration and development in the regular school environment. This study highlights the need to further explore certain factors influencing the challenges faced by parents of children with Down syndrome in regular schools. Future research should focus on the availability of school resources, ongoing teacher training, as well as the attitudes and perceptions of educators and peers toward the inclusion of children with Down syndrome. Special attention could also be given to studying local educational policies and their impact on school inclusion. Finally, longitudinal studies would be particularly useful to track the evolution of school inclusion and the associated challenges throughout different stages of the child's educational journey. In conclusion, the findings of this study emphasize the importance of a systematic and adaptive approach to the school inclusion of children with Down syndrome, while highlighting numerous opportunities to improve support for parents and educators in order to foster a successful and harmonious integration of these children into regular schools.

AUTHORS' CONTRIBUTION

It is hereby acknowledged that all authors have accepted responsibility for the manuscript's content and consented to its submission. They have meticulously reviewed all results and unanimously approved the final version of the manuscript.

LIST OF ABBREVIATIONS

DS	=	Down Syndrome
ANOVA	=	Analysis of Variance

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The study received approval from the Ethics Committee of the Faculty of Medicine, University Mohamed V Rabat, Morocco (approval number 09/23).

HUMAN AND ANIMAL RIGHTS

All human research procedures followed were in accordance with the ethical standards of the committee responsible for human experimentation (institutional and national), and with the Helsinki Declaration of 1964, as revised in 2000.

CONSENT FOR PUBLICATION

Informed consent was obtained from the parents of the children.

STANDARDS OF REPORTING

STROBE guidelines were followed.

FUNDING

None.

CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest, financial or otherwise.

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