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Inclusive Education: Exploring Parental Aspirations for Children with Down Syndrome in Regular Schools

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Abstract:

Background: The global trend towards inclusive education emphasizes integrating children with disabilities, such as those with Down syndrome, into regular education systems. Historically, these children were often placed in specialized institutions. Understanding parental aspirations is crucial for assessing the effectiveness of inclusive education, particularly as it pertains to children with Down syndrome, irrespective of the severity of their condition.

Objective: This study aims to evaluate whether mainstream schooling is advantageous for children with Down syndrome, regardless of the severity of their condition. It also seeks to delineate educational objectives based on the severity of the syndrome, with a focus on whether educational priorities are placed on academic achievement or socialization.

Method: A cross-sectional study was conducted over one year at the Dysmorphology Unit of the Children's Hospital of Rabat, Morocco. The study involved 148 parents of children with Down syndrome. Data were gathered using a questionnaire that included variables, such as parental age, education level, severity of cognitive and language disorders in children, and perceptions of school and social inclusion. Statistical analyses were performed using SPSS 25, employing descriptive statistics, chi-square tests, Cramer's V coefficient, and t-tests to analyze categorical and quantitative variables. Parents' perceptions of mainstream schools were assessed using a Likert scale.

Results and Discussion: The average parental expectation for the education of children with Down syndrome in mainstream schools was 3.8 (SD = 0.45), indicating high expectations. Statistical analysis revealed no significant difference (P = 0.4) in parental preferences for educational settings based on the severity of the child's disorders. The Cramer's V coefficient (8%) indicated a weak association between the severity of disorders and educational placement decisions. Parents emphasized the importance of mainstream education for social integration and socialization.

CONCLUSION: The findings underscore the role of inclusive education in supporting both academic and social development for children with Down syndrome. Future research should explore the long-term outcomes of inclusive education and the factors influencing parental decision-making.

Keywords: Down syndrome, inclusive education, mainstream schooling, parental perceptions, severity of disorders, social inclusion.

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1. INTRODUCTION

Across the globe, every child with a disability is entitled to receive a fair and equitable education [1, 2], in line with the principles of inclusive education [3]. Inclusive education seeks to modify the educational system to accommodate all children, offering an alternative to a model that excludes students based on their perceived ability to adhere to the standard curriculum [4, 5]. This approach values student diversity as an asset, thus fostering their social and educational integration through various forms of collaboration [6, 7]. By recognizing and addressing individual needs, inclusive education provides a chance for empowerment, self-determination, and social integration, thereby strengthening the foundations of an inclusive society that values human differences. Despite widespread legislative backing for inclusive education worldwide, its implementation is still inconsistent.

In Morocco, including children with Down syndrome poses a significant yet critical challenge within the country's educational framework. The Ministry of National Education, Preschool, and Sports has initiated several efforts to support educational integration. This includes issuing guidance for families with children with disabilities and for relevant associations [8]. Nonetheless, despite these initiatives, a considerable number of children with disabilities remain unschooled and socially isolated, as evidenced by the 2014 census from the High Commission for Planning (HCP), which shows a low percentage of children with disabilities aged 4 to 15 having access to education.

While various studies have examined the views of teachers on the educational integration of children with Down syndrome [9], the cooperation between teaching assistants and teachers to support these children [10], and the quality of life for children with Down syndrome [11], there has been limited focus on understanding the motivations of parents seeking inclusive learning environments for their children with Down syndrome. This quantitative study aims to provide valuable insights by exploring the perspectives of parents who consult for their children with Down syndrome.

Furthermore, Down syndrome, which is caused by an extra copy of chromosome 21, results in intellectual and developmental delays. Features, such as almond-shaped eyes, a flat nasal bridge, low muscle tone, and an increased risk of health issues like heart defects and hearing loss can occur regardless of the health of the parents, their economic status, or lifestyle [12, 13]. The incidence of Down syndrome is approximately 1 in 770 births [14], and it increases with maternal age, with varying frequencies among different populations [15].

In Morocco, with its diverse cultural and social landscape, it is crucial to explore how the education system can be adapted to inclusively accommodate these children [16]. The uniqueness of this issue lies in the need to develop sensitive and customized educational approaches [17], taking into account Morocco's various socio-cultural realities while ensuring equitable educational access for all children, regardless of the presence of Down syndrome. This specificity highlights the importance of a thorough review of current educational policies and parental perceptions to foster an inclusive and supportive educational environment for every child with Down syndrome in Morocco.

Children with Down syndrome may face challenges in the school setting, including issues with learning, language development, and memory. To fully engage in educational activities and achieve their potential, these children might need additional support. Addressing the unique learning needs of individuals with Down syndrome can be achieved through inclusive educational practices, such as individualized teaching plans, specialized teaching methods, and support from both professionals and family members [18].

The primary goal of this article is to investigate parents' expectations concerning the educational inclusion of their children with Down syndrome, irrespective of the severity of their condition. This investigation aims to determine whether parents prioritize academic learning, socialization, or both by allowing their children to study alongside their peers in mainstream schools closest to their homes. The results of this study could help shape educational policies and inclusion practices, thus promoting equal opportunities for all Moroccan children, regardless of their specific needs [4].

2. LITERATURE REVIEW

2.1. Parental Aspirations

Parents of children with Down syndrome have deep aspirations for their children's futures, especially regarding education and social inclusion [19]. These hopes extend beyond academic success to encompass the overall

development of their children [20]. Parents envision an educational experience that is both enriching and inclusive, one that enhances their children's social skills and fosters a sense of belonging within the school environment [21]. The quest for social integration is crucial, as it is closely connected to the overall well-being and self-esteem of children with Down syndrome [22]]. A previous research [23-25] emphasizes the importance parents place on developing social skills alongside academic knowledge, highlighting their belief in their children's potential to thrive in inclusive settings.

Parents advocate for the recognition and appreciation of their children's unique individuality in educational settings. They seek environments where their children are not just included but are also valued for their unique contributions and personalities [26]. This desire transcends mere physical inclusion; it involves a deeper wish for emotional and social acceptance. Parents want their children to be part of a school community where differences are celebrated and every child's potential is acknowledged and nurtured. By promoting such inclusive environments, parents aim to ensure that their children with Down syndrome have equal access to opportunities and experiences, thus fostering a sense of equity and belonging.

2.2. The Global Movement Toward Inclusive Education

The global push for inclusive education reflects a shift from viewing disability as a problem to be fixed to recognizing every child's right to a quality education. This movement is supported by international frameworks like the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), which advocates for the complete inclusion of individuals with disabilities in all aspects of society, including education [27]. Despite these positive goals, parents often face challenges in inclusive settings. These challenges include limited resources, insufficient teacher training, and societal attitudes towards disability [28]. Concerns about the academic progress and social integration of children with Down syndrome persist among parents [29].

Inclusive education offers numerous benefits for children with Down syndrome, including enhanced academic skills, better social interactions, increased self-esteem, and greater opportunities for community participation. Furthermore, inclusion in mainstream schools promotes understanding and acceptance among typically developing peers, fostering a more inclusive society [30]. Effective inclusion relies on collaboration between parents, educators, and other professionals. Open communication, mutual respect, and shared decision-making are vital for successful partnerships. When parents are actively involved in their child's education and feel supported by the school, the outcomes for the child are generally more positive [31].

2.3. Parental Involvement and Advocacy

The active involvement and advocacy of parents are crucial for achieving successful, inclusive education for children with Down syndrome. When parents engage actively in their child's educational journey, they provide not only emotional support but also serve as key partners with educators and school staff. This collaboration can result in a more tailored educational experience that meets the child's individual needs. A previous research [32] highlights the connection between active parental involvement and positive educational outcomes. The participation of parents in school activities, regular communication with teachers, and involvement in decision-making processes all contribute to a more inclusive and effective educational environment for their children.

Moreover, parental advocacy is essential for ensuring that children with Down syndrome receive the necessary accommodations and support services to succeed in a regular school setting. Parents often act as primary advocates for their children, pushing for the implementation of inclusive practices and adapting teaching methods and materials to meet the specific learning needs of theirchildren [32]. This advocacy extends beyond the classroom, impacting broader educational policies and practices as parents seek to influence systemic changes that enhance inclusivity and accessibility. Through their dedicated efforts, parents play a key role in shaping an educational landscape that better addresses the diverse needs of all students, including those with Down syndrome.

The role of schools and educators is critical in creating an inclusive environment. Effective communication between parents and educators, individualized educational plans, and a supportive school culture are essential elements of successful inclusion [33]. Training educators to understand the specific needs of children with Down syndrome and to apply inclusive teaching strategies is also crucial [34].

3. MATERIALS AND METHODS

This cross-sectional study was conducted at the Dysmorphology Unit of the Children's Hospital of Rabat, affiliated with the Ibn Sina University Hospital Center in Rabat, Morocco. The study spanned one year, from December 3, 2021, to December 31, 2022.

3.1. Sample Size

To determine the sample size and ensure representativeness, we estimated that approximately 240 children with Down syndrome (aged 4 to 15 years) visited the unit every Thursday in 2022. Using a 95% confidence level and a 5% margin of error, the required sample size for parents of children with Down syndrome was calculated to be 148.

3.2. Participants

The study involved one parent from each child with Down syndrome who visited the unit. A total of 148 parents participated in the study. Inclusion criteria included residency in the Rabat, Salé, or Kenitra regions

and having a child with Down syndrome aged between 4 and 15 years, regardless of socio-economic status. Exclusion criteria were refusal to participate, previous participation in the survey, residence outside the specified regions, and having a child younger than 4 or older than 15 years.

3.3. Data Collection Procedure

Data were gathered using a questionnaire designed to collect information on the ages of parents and children, their educational levels, severity of cognitive and language disorders as reported by parents, and perceptions of school and social inclusion. The questionnaire, originally from Hasnaa Hayek's thesis "L'intégration scolaire des enfants en situation de handicap: le cas particulier des enfants avec autisme" [35], was adapted for this study on Down syndrome.

The questionnaire was modified after assessing its relevance to the target group. It was translated into Arabic to ensure cultural and linguistic appropriateness. A pretest with 42 parents was conducted to evaluate the clarity, comprehensibility, and relevance of the adapted questionnaire. The pretest yielded a Cronbach's alpha of 0.75, indicating good internal consistency.

These modifications ensured that the questionnaire accurately reflected the experiences and perceptions of parents with children diagnosed with Down syndrome.

3.4. Statistical Analysis

Statistical analyses were performed using SPSS 25 software. Descriptive statistics for quantitative variables were presented as means and standard deviations, depending on their distribution (normal or otherwise). Qualitative variables were reported as frequencies and percentages.

A five-point Likert scale was used to gauge parents' perceptions of their children's inclusion in regular schools. Responses were rated from 1 ('not important') to 5 ('very important'), facilitating a quantitative analysis of parental opinions.

For comparative analysis, categorical variables were examined using the chi-square test, with the strength of associations measured by the Cramer's V coefficient. Means of normally distributed quantitative variables were compared using the Student's t-test for independent samples. For non-normally distributed variables, the Mann-Whitney U test was used.

3.5. Integration of Qualitative Data

To complement the quantitative data, the questionnaire included open-ended questions such as: "What are the main difficulties your child faces at school?" and "How do you perceive the support provided by the school?" Responses highlighted challenges related to communication and social skills and varied levels of school support.

Additionally, semi-structured interviews were conducted with 20 parents to gain deeper insights into their perceptions. These interviews revealed diverse experiences with school inclusion, including feedback such as: "The school is very understanding but sometimes lacks specific resources" and "We had to intervene multiple times to adapt the curriculum."

3.6. Analysis of Cause-and-Effect Relationships

The analysis of cause-and-effect relationships indicated that both the age and education level of parents influence their perceptions and decisions about their children's school inclusion. Older parents (over 40 years) generally had more critical views on inclusion efforts compared to younger parents. Parents with higher educational backgrounds were more actively involved in their child's education and sought additional resources for inclusion. Past experiences with educational institutions and satisfaction with available resources significantly impacted their decisions regarding school inclusion.

3.7. Ethical Considerations

An explanatory briefing and informed consent form were provided to the parents of children with Down syndrome. Parents were assured that their data would remain confidential. The study received approval from the Ethics Committee of the Faculty of Medicine. All ethical standards, as outlined in the Helsinki Declaration of 1964 (revised 2000), were adhered to, ensuring informed consent, anonymity, and confidentiality for all participants.

4. RESULTS

Table **1** presents the demographic and baseline characteristics of the study participants. This research provided data on the educational status of 148 children diagnosed with Down syndrome, aged 4 to 15 years, with an average age of approximately 10 years.

Table 1. Summary of demographic and baseline characteristics.

Variable	n=148 (%)	Mean (Std. Deviation)
Age Mother (years)		**49.12 (8.61)**
30-35	1.4	
36-40	23.6	
41-50	25.0	
51-60	44.6	
61-66	5.4	
Age Father (years)		52. 32(8.59)

Variable	n=148 (%)	Mean (Std. Deviation)
Age Mother (years)		**49.12 (8.61)**
38-40	8.1	
41-50	45.9	
51-60	32.4	
61-70	12.2	
71-75	1.4	
Age of the child with Down syndrome	18.2	10.12 (3.39)
4-6	23 .0	3(0.791)
7-9	31.1	2.73 (1.06)
10-12	27.7	1.29)
13-15	6.1	
Level of education of Father	12.8	
Illiterate	56.1	
Primary	25	
Secondary	17.6	
Higher education	20.3	
Level of education of Mother	33.1	
Illiterate	29.1	
Primary	55.4	
Secondary	44.6	
Higher education	28.4	
Sex of the child with down syndrome	64.9	
Girl	6.8	
Boy	1.4	
Number of children	25.0	
1-2	55.4	
3-4	18.2	
5-7	82.4	
Placement of the child with down syndrome	16.7	
Within their siblings:	15.6	
Firstborn	58.2	
Middle child	26.2	
Lastborn	83.8	
Only child	16.2	
Mainstream classroom education		
Yes		
No		
The school level of children with Down syndrome		
preschool		
Primary		
Inclusive classroom (CLIS)		
severity of disorders		
light to medium		
severe		

Among the children with Down syndrome, 18.2% are aged 4 to 6 years and 23.0% are between 7 and 9 years, an important period for learning skills like reading and writing. Additionally, 31.1% are in the 10 to 12-year age range, and 27.7% are between 13 and 15 years old.

The majority of the children are at an age-appropriate for kindergarten and primary school, with over 72.3% being in a critical period where educational orientation is particularly important for parents. On average, each family with a child with Down syndrome has three children. In 55.4% of cases, the child with Down syndrome is the youngest, 25% are younger siblings, and 18.2% are only children, with 1.4% being firstborns.

Table 2. Perception of parents of children with Down syndrome in regular schools.

		not important	slightly important	neutral	important	very important	Mean	Std.Deviation
To benefit from personalized learning according to one's needs.	N	2	7	8	31	62	4.3	0.98
	%	1.80%	6.40%	7.30%	28.20%	56.40%		
Prepare him for the future job market.	N	22	17	15	46	10	3.04	1.32
	%	20%	15.50%	13.60%	41.80%	9.10%		
Promote his acceptance by society.	N	19	0	14	16	61	4.08	1.17
	%	17.30%	0%	12.70%	14.50%	55.50%		
Enfance his academic abilities.	N	4	36	29	13	28	3.22	1.25
	%	3.60%	32.70%	26.40%	11.80%	25.50%		

		not important	slightly important	neutral	important	very important	Mean	Std.Deviation
Enable him to obtain a diploma.	N	37	7	37	20	9	2.6	1.33
	%	33.60%	6.40%	33.60%	18.20%	8.20%		
Provide him with friendships with other children.	N	6	4	26	28	46	3.94	1.14
	%	5.50%	3.60%	23.60%	25.50%	41.80%		
Foster his personal development.	N	4	2	5	12	87	4.6	0.94
	%	3.60%	1.80%	4.50%	10.90%	79.10%		
Facilitate his integration into social life.	N	2	4	4	12	88	4.63	0.86
	%	1.80%	3.60%	3.60%	10.90%	80%		
weighted Mean							3.8	
Std.Deviation								0.45

In this sample, Down syndrome affected girls at a rate of 55.4% and boys at 44.6%. Out of the 148 surveyed children, 122 were enrolled in regular schools: 15.6% in preschool, 58.2% in primary school, and 26.2% in an inclusive classroom (CLIS).

A majority of parents (82.4%) preferred mainstream education for its benefits, such as improved socialization and the development of tolerance among peers. Conversely, 16.7% of parents believed that special classes could be beneficial for certain subjects due to smaller class sizes allowing for tailored teaching approaches.

According to parental reports on the severity of conditions of their children, 83.8% experienced mild to moderate difficulties, while 16.2% faced severe challenges.

Table **2** outlines parents' expectations regarding mainstream education for children with Down syndrome. The highest average score was for promoting social integration, with a mean of 4.63 (high level) and a standard deviation of 0.86. The second highest expectation was for personal development, with a mean of 4.6 (high level) and a standard deviation of 0.94. Adaptation of learning to individual needs was rated next, with a mean of 4.3 (high level) and a standard deviation of 0.98. Lastly, the desire to promote social acceptance was rated at 4.08 (high level), with a standard deviation of 1.17.

The expectations are categorized as follows: fostering positive relationships with peers averages 3.94 (moderate level), with a standard deviation of 1.14. The development of academic skills is rated at an average of 3.22 (moderate level), with a standard deviation of 1.25. Preparation for the job market scores an average of 3.04 (moderate level), with a standard deviation of 1.32. Lastly, the goal of obtaining a diploma is noted with an average of 2.6 (low level), with a standard deviation of 1.33.

Overall, the average expectations of parents for the education of their children with Down syndrome in mainstream schools is 3.8, with a standard deviation of 0.45, indicating generally high expectations for the quality of education in these settings. According to the 5-point Likert scale, as shown in Table **2**, this average falls within the interval [3.41-4.20], which is categorized as a high level. The classification intervals are as follows:

- Low level: [1.00-2.59]
- Moderate level: [2.60-3.39]
- High level: [3.40-5.00]

Table 3. The effect of the severity of the disorders on parents' choice of educational environment

		The severity of the disorders	
		light to medium n (%)	Severe N (%)
Normal Classes		89 (91.8)	11 (84.6)
Special Classes		8 (8.20)	2 (15.4)
P		0.4	
Cramer's V Coefficient		8%	

Table **3** illustrates the impact of disorder severity on parental expectations. A chi-square test for independence was conducted, which did not show statistical significance ($P > 0.05$, $P = 0.4$). The severity of the disorder does not significantly influence parents' preferences for educational settings, with the Cramer's V coefficient at 8% indicating a very weak relationship between the severity of the disorder and the decision to enroll children in either regular or specialized classes. Predictors identified through logistic regression analysis for choosing between mainstream and specialized classes are detailed in Table **4**.

Regardless of the severity of disorders in children with Down syndrome, parents generally prefer mainstream education. They view school integration as crucial for broader societal inclusion. Parents believe that school serves as a key community setting where their child can learn to interact with neurotypical peers and develop adaptive behaviors, aiding their overall social integration without facing stigma due to their diverse behaviors. Schools offer opportunities for these children to engage in various community activities outside the classroom, such as recreational centers, sports clubs, and social events.

Table **5** indicates that the average social score for children with severe Trisomy 21 (4.36) is higher compared to children with mild to moderate Trisomy 21 (4.15). However, this difference is not statistically significant, with a p-value of 0.48 ($p > 0.05$). This suggests that, regardless of the severity of impairment, socialization remains a crucial factor for parents.

Table 4. The choice between ordinary class and specialized class and socio-demographic data

Variable	Regular classroom education		Logistic regression	
	Yes N (%)	No N=(%)	OR (95% CI)	P-value
Mother Age (years)				
30-35	12(9.8)	-	-	-
36-40	44(36.1)	13(50.0)	0.936(0.889-0.985)	0.011*
41-50	46(37.7)	1(3.8)	-	-
51-60	18(14.8)	12(46.2)	-	-
61-66	2(1.6)	-	-	-
Age of Father (years)				
38-40	12(9.8)	-	-	-
41-50	44(36.1)	24(92.3)	0.863(0.805-0.926)	0.000*
51-60	46(37.7)	2(7,7)	-	-
61-70	18(14.8)	-	-	-
71-75	2(1.6)	-	-	-
Age of child with Down syndrome				
4-6	14(11.5)	13(50.0)	-	-
7-9	34(27.9)	-	-	-
10-12	35(28.7)	11(42.3)	0.811(0.711-0.924)	0.002*
13-15	39(32.0)	2(7.7)	-	-
Father's education level				
Illiterate	7(5,7)	2(7.7)	-	-
Primary	16(13.1)	3(11.5)	-	-
Secondary	66(54.1)	17(65.4)	-	-
Higher Education	33(27.0)	4(15.4)	0.805(0.479-1.353)	0.413
Mother's education level				
Illiterate	19(15.6)	7(26.9)	-	-
Primary	28(23.0)	2(7,7)	-	-
Secondary	44(36.1)	5(19.2)	-	-
Higher Education	31(25.4)	12(46.2)	1.128(0.751-1.693)	0.562
Sex of child with Down syndrome				
Girl	65(53.3)	17(65.4)	1.656(0.685-4.005)	0.023*
Boy	57(46.7)	9(34.6)	-	-
Number of children				
1-2	31(25.4)	11(42.3)	0.693(0.494-0.971)	0.033*
3-4	82(67.2)	14(53.8)	-	-
5-7	9(7,4)	1(3.8)	-	-
Placement of the child with Down syndrome Within their brothers and sisters:				
Firstborn	2(1,6)	2(7,7)	-	-
Last born	80(65.6)	3(11.5)	-	-
Cadet	15(12.3)	19(73.1)	-	-
Only son	25(20.5)	2(7,7)	-	-
The educational level of children with Down syndrome				
preschool	19(15.6)		-	-
Primary	71(58.2)		-	-
Inclusive class (CLIS)	32(26.2)		-	-
severity of disorders				
Light to medium	109(89.3)	15(57.7)	0.163(0.062-0.428)	0
severe	13(10.7)	11(42.3)	-	-

Similarly, regarding academic expectations, the difference between the mean scores of the two groups (4.00 for severe and 3.84 for mild to moderate) is also not statistically significant. This finding implies that parental expectations may not be strongly associated with the child's cognitive abilities or the severity of their disorder.

It is important to interpret these results with caution due to the small sample size of the severe group (n = 13). Additionally, the survey results reveal that parents of children with intellectual disabilities recognize the importance of socialization for their children in school. However, they also note that their children's learning

experiences are distinct due to their unique learning needs.

Applying the Mann-Whitney U test to compare the two independent groups (mild to moderate vs. severe) revealed a significant effect ($p < 0.05$) of disorder severity on parents' social expectations ($U = 425$, $p = 0.029$). This indicates a statistically significant difference between the groups in terms of social scores.

Table 5. The effect of the severity of the disorders on parental expectations

	Severity of disorders	N	Mean (Std. Deviation)	t	p
academic score	Light to medium	97	4(0.62)	0.85	0.39(ns)
	Severe	13	3.84(0.37)		
Social score	Light to medium	97	4.15(1.04)	0.70	0.48(ns)
	Severe	13	4.36(0.37)		

Overall, from the parents' perspective, the severity of disorders appears to influence socialization preferences, though it does not significantly affect preferences for educational settings. The significant difference in social scores highlights the importance of considering the degree of disorder when planning social support measures for families of children with Trisomy 21.

5. DISCUSSION

Parents view school as the first conventional community where their child can learn to interact with neurotypical peers and develop appropriate social behaviors [36]. By participating in mainstream classes, children with Down syndrome are provided with opportunities to navigate social situations without facing judgment solely due to their distinctive behaviors.

The findings of this study regarding the inclusion of children with Down syndrome indicate that irrespective of the severity of the condition, parents prefer mainstream education for their children. Statistical analysis using the Chi-square test confirms that the severity of the condition does not significantly influence parents' preferences for educational settings ($P > 0.05$, $P = 0.4$). Furthermore, the low Cramer's V value (8%) points to a minimal relationship between the severity of the disorder and the choices of parents between inclusive or specialized education, consistent with the findings of a previous study [4], which showed that students in mainstream classes achieved notable improvements in expressive language, reading, and writing skills, while those in specialized education did not exhibit significant academic progress over a 13-year period.

The preference of parents for inclusive education is largely based on their belief in the critical role of school integration in fostering social inclusion [37]. Schools offer children with Down syndrome the chance to participate in various community activities beyond the classroom, such as recreational centers, sports clubs, and social events. Engaging in these activities helps enhance their social skills and broaden their experiences outside the educational setting. Nevertheless, another study [38] notes that children with more severe learning disabilities are often referred to special schools.

It is important to recognize that while the majority of parents in this study (122 out of 148) preferred inclusive education, individual preferences may vary based on personal circumstances and the specific needs of each child. Some parents may choose specialized education if they believe it offers a more supportive and tailored learning environment for their child [39]. Consequently, educational institutions must provide a range of options and support services to cater to the diverse needs and preferences of parents and their children with Down syndrome [40].

In summary, from the parents' perspective, the severity of the disorder may influence socialization preferences ($p < 0.05$), as indicated by the Mann-Whitney U test results ($U = 425$, $p = 0.029$). However, this does not significantly affect preferences for educational settings. Maturana [41] emphasizes that while the severity of the disorder impacts parents' choices regarding socialization and schooling, it is essential to address both educational and social expectations. These findings highlight the significant role of inclusive education in promoting social integration and preparing children for active societal participation. Future research should investigate the long-term effects of inclusive education on individuals with Down syndrome and explore factors influencing the decisions of parents about the educational paths of their children.

CONCLUSION

Inclusive education is gaining momentum globally, advocating for the integration of children with disabilities into standard educational systems. This study aimed to evaluate whether mainstream schooling benefits all children with Down syndrome, irrespective of the severity of their condition. Additionally, it sought to clarify learning objectives based on the severity of the syndrome, focusing on whether educational priorities lean towards academic skills or socialization.

The study provides important insights into parental aspirations regarding the educational and social inclusion of their children with Down syndrome. Results indicate that parents hold high expectations for the education of their children in mainstream schools. With an overall average score of 3.8, parents prioritize mainstream education, underscoring its significance for societal integration and social development.

Significantly, the study found that the severity of cognitive and language disorders in children with Down syndrome does not substantially affect parents' preferences for educational settings. This suggests that parents believe mainstream education can benefit children across a range of disability levels. The minimal relationship between severity and enrollment choices, as evidenced by a low Cramer's V coefficient, reinforces the notion that parents value inclusive education for their children with Down syndrome.

The study underscores the importance of inclusive education in fostering both academic and social growth for children with Down syndrome. Mainstream education provides opportunities for these children to learn alongside their typically developing peers, enhancing social interactions and friendships. Exposure to a diverse peer group helps children with Down syndrome develop crucial social skills and a sense of belonging.

Moreover, the findings highlight the need to consider individual learning objectives according to the severity of the syndrome. Although academic skills are important, the emphasis on socialization in mainstream education reflects the value parents place on social skills and integration. This aligns with the broader goals of inclusive education, which aim to offer a well-rounded educational experience addressing both academic and social needs.

It is important to note that this study was conducted at the Dysmorphology Unit of the Children's Hospital of Rabat, Morocco, and the results may not be universally applicable. Future research should investigate the long-term outcomes for children with Down syndrome in mainstream schools, including academic performance, social integration, and overall well-being. Further exploration into the factors influencing parental decision-making regarding educational settings for their children with Down syndrome would also provide a deeper understanding of these complexities.

In summary, this study adds to the growing body of literature on inclusive education for children with Down syndrome. It emphasizes the crucial role of inclusive education in supporting both academic and social development, regardless of the severity of disabilities. The high expectations of parents for mainstream education highlight the importance of societal integration and socialization. Moving forward, continued advocacy for inclusive education policies and practices is essential to support the educational and social inclusion of children with Down syndrome and other disabilities.

AUTHORS' CONTRIBUTIONS

The authors confirm their contribution to the paper as follows: study conception and design by SE, AZ, MM, MO, MA, and AA. All authors reviewed the results and approved the final version of the manuscript.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The study received approval from the Ethics Committee of the Faculty of Medicine. Ethical approval no. n° 09/23.

HUMAN AND ANIMAL RIGHTS

All procedures performed in studies involving human participants were in accordance with the ethical standards of institutional and/or research committee and with the 1975 Declaration of Helsinki, as revised in 2013.

CONSENT FOR PUBLICATION

Informed consent was obtained from the parents of the children.

STANDARD OF REPORTING

STROBE guidelines were followed.

AVAILABILITY OF DATA AND MATERIAL

All data generated or analysed during this study are included in this published article.

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None.

CONFLICTS OF INTEREST

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

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