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Promoting Inclusion and Well-Being Through Inclusive Physical Education and Parasports: an Approach for Adolescents with Motor Impairment

Omar Ben Rakaa[1ABCD], Mustapha Bassiri[1ABCD] and Said Lotfi[1ABCD]

[1]Hassan II University of Casablanca

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Corresponding Author: Omar Ben Rakaa, e-mail: : omarbenrakaa@gmail.com
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Abstract

Objectives. This study aimed to examine the impact of inclusion students with motor impairment (MI) into adapted physical education (APE) and school para-athletics on their feeling of pedagogical and school inclusion, as well as on their psychological well-being and self-esteem.

Materials and methods. The study involved 96 pupils having motor impairment, aged 16.79 ± 0.87, enrolled in public schools in Morocco. The pupils were divided into three groups according to the para-athletics classification: 30 % (family of 30), 40 % (families of 40) and 30 % (family of 50). The participants were randomly assigned into three groups: a control group with no specific programme, a group following an APE programme (24 sessions), and a third group with APE and additional para-athletics sessions (24 sessions), including competitions for three months. The assessments were carried out before and after the intervention. The scales were employed to gauge self-esteem, psychological well-being, as well as feeling of pedagogical and schooling inclusion.

Results. The findings indicate that students who engaged in both the APE and para-athletics programmes exhibited enhancements in their feeling of pedagogical and schooling inclusion, psychological well-being, and self-esteem, when compared to the control group. The group that participated in both APE and para-athletics demonstrated the most significant progress in this study.

Conclusions. The findings suggest that the integration of adapted physical education and inclusive sports, including para-athletics, into school curricula in a systematic manner represents a pivotal element in promoting inclusion, well-being and self-esteem among students with motor impairments.

Keywords: motor disability, psychosocial development, educational equity, school inclusion strategies, adapted sports, adapted physical activity.

Introduction

The existing literature on the inclusion of students with special educational needs (SEN) in education systems worldwide has become a significant area of concern, supported by a multitude of international frameworks (Direction des Curricula, 2019b, 2019c, 2019a; UNESCO, 2005). The most significant of these is the United Nations Convention on the Rights of Persons with Disabilities (2008), which places particular emphasis on the necessity of inclusive education for all children (United Nations, 2008). This shift towards inclusive education is indicative of a growing awareness of the importance of equity and equal opportunity in educational environments (Lindsay Smith et al., 2017). Concurrently, the advantages of physical activity on mental and physical health are well substantiated in the literature (El Moutaraji et al., 2021a, 2021b; WHO, 2020). Such outcomes include a reduction in stress levels, an improvement in quality of life, and a general sense of well-being (Biddle & Asare, 2011). Nevertheless, the inclusion of students with motor impairment (SWMI) into physical education programmes continues to present a significant challenge (Mokmin & Rassy, 2024). A review of the literature reveals that SWMD encounter a range of physical, social, and pedagogical obstacles that restrict their participation in traditional sports activities (Ballas et al., 2022; Chomistek et al., 2019; Sammon et al., 2020). To illustrate, a study demonstrated that physical barriers, including access to infrastructure, and negative social atti-

tudes impede the capacity of disabled students to participate in physical activities to their fullest extent (Block & Obrusnikova, 2007). Furthermore, the absence of comprehensive training for educators on the inclusion of SWMD in sports programmes was identified as a significant barrier to their participation (Vickerman & Maher, 2019).

It is imperative that physical activities are adapted and that inclusive school sports programmes are implemented in order to overcome the aforementioned challenges. Indeed, research demonstrates that these approaches can not only enhance the inclusion of students with motor impairment, but also facilitate their physical and psychosocial development (Risyanto et al., 2024). It is thus imperative that educational organisations modify their curricula to align with the specific requirements of these students, thus facilitating a more inclusive and equitable educational experience (Stentiford & Koutsouris, 2022). The particular research context serves to highlight the significance of adapted physical education (EPA) as a constituent element of inclusive education (Martín-Rodríguez et al., 2024; Torres-Castro et al., 2021). Students with motor impairment encounter particular challenges that may impede their engagement in physical activities (Ben Rakaa et al., 2024b), such as physical limitations and low self-esteem (Alhumaid et al., 2021). A recent study has demonstrated that the incorporation of adapted physical activity can not only enhance physical capabilities but also foster improvements in self-esteem and general well-being (Wickman et al., 2018). The integration of inclusive school sports facilitates the social and educational inclusion of pupils with impairment (Hovdal et al., 2021). The creation of an environment in which all students, irrespective of their physical abilities, are able to participate in sporting activities serves to foster the development of an inclusive culture that extends beyond the confines of the classroom (Lieberman et al., 2024).

The evidence indicates that inclusive school sports programmes have a beneficial impact on the motor and social skills of students with special educational needs (SEN) (Nalbant Correspondence & Sibel Nalbant, 2018). Furthermore, these programmes have the potential to mitigate feelings of isolation and cultivate more constructive interpersonal relationships among students, thereby facilitating their integration into the school community (Wickman et al., 2018). It is of the utmost importance to continue researching and developing strategies for the inclusion of adapted physical education (EPA) and inclusive school sports, such as para-athletics, to facilitate the inclusion of students with motor impairment in mainstream educational settings. These approaches have the potential to improve not only the physical and mental health of students with motor disorders, but also their school and pedagogical inclusion, as well as their well-being and self-esteem. In light of the growing emphasis on this topic, it is essential to examine how school practices can facilitate such inclusion. In particular, this study examines the influence of the inclusion of children with motor-impaired in APE and school para-athletics on their feeling of school and pedagogical inclusion, as well as on their psychological well-being and self-esteem.

Materials and Methods

Study Participants

The study was conducted on a sample of 96 participants with motor impairment, aged 16.79 ± 0.87, enrolled in regular public schools in different regional academies in Morocco. The participants were distributed as follows: 35 % lived in rural areas and 65% lived in urban areas. The participants were selected according to the following inclusion criteria: they were enrolled in a regular class with able-bodied pupils, they held a disability certificate issued by Entraide Nationale, and they had a medical certificate of physical fitness allowing them to participate in physical education classes. Parents or legal guardians provided informed consent for their children's participation in the study and for the publication of the results. Prior to their inclusion, the participants were subjected to the International Paralympic Committee's disability classification system (International Paralympic Committee, 2016), which was conducted by volunteer experts in the field. The classification system revealed that 40% of the participants were eligible to take part in throwing disciplines (field), while 60 % were able to take part in running and/or jumping disciplines (track). Of these, 30 % had cerebral impairment, 40% had amputations or similar, and 30% had motor impairment due to spinal cord injuries.

Protocol

This study used the randomized controlled trial (RCT) method to evaluate the impact of two adapted physical activity (APA) programs : the adapted physical education (APE) program alone and the combined APE+Para-athletics program. Participants were randomly divided into three distinct groups to minimize selection bias.

The first control group did not participate in any specific program during the study period. The second group (EPA) followed an EPA program, consisting of two weekly sessions of one hour each, focused solely on EPA for a period of three months.The third group (EPA+Para-athletics) benefited from the same EPA program as the second group, with the addition of two extra sessions per week of 1h30 each, dedicated to performance Para-athletics. This group also took part in inclusive school sport competitions at provincial, regional and national levels in school Para-athletics.

The school-based adapted physical activity (APA) programme has been designed with the specific needs of students with motor impairment in mind. The programme focuses on two main athletic disciplines: throwing and running/jumping. It is designed for educational purposes in the teaching and learning cycles (APE) as well as for sporting purposes within the framework of inclusive school sport. In doing so, it takes into account the classifications of motor impairment (cerebral deficiencies, amputations, spinal cord injuries) in order to encourage the practice and physical participation of students in PE classes, with the ultimate goal of gradually including them in competitive sports.

The students' physical education and sports (PE) teachers devised learning cycles in the form of an APE programme, tailored to the profile of their students with motor impairment, as part of their PE teaching cycles. Subsequently, Para-athletics training programmes were established with the objective of optimising sporting performance, and students were integrated into provincial, regional and national competitions as part of an inclusive school sport initiative.

The programme is structured in three phases: initiation, development and consolidation. The intensity of

the programme is progressive, with the level of difficulty adapted to the individual abilities of the students. Regular assessments and individualised progress monitoring facilitate the adaptation of session content according to the performance of each participant, while encouraging participation in inclusive sports competitions to foster the students' physical and social development. In both programmes, a pre-test and post-test were conducted, with the Psychological Well-Being, Self-Esteem and sense of pedagogical and school inclusion. Scale administered on each occasion.

Measuring Instrument

Self-esteem

The Rosenberg Self-Esteem Scale (RSES) is a widely used instrument for the assessment of global self-esteem. The scale comprises ten statements, which are rated on a four-point Likert scale, with the subject indicating the extent to which they agree or disagree with each statement. It is a reliable and straightforward measure that is employed in a multitude of psychological, educational and clinical contexts (Vallieres & Vallerand, 1990).

Psychological Well-being

The Ryff Psychological Well-Being Scale is a comprehensive assessment tool that evaluates six fundamental dimensions of well-being, namely autonomy, environmental mastery, personal growth, positive relationships, purpose in life and self-acceptance. The scale was developed in 1989 and employs a Likert scale to quantify the aforementioned aspects. This instrument is frequently employed for the assessment of psychological well-being in a multitude of cultural and clinical contexts (Ryff, 1989).

Pedagogical Inclusion Scale

The current scales, namely the Sense of Pedagogical Inclusion (SPI) scale and the Sense of school Inclusion Scale (SSI), are founded upon the Norwegian iteration of Booth's Inclusion Index (Booth & Ainscow, 2002). Subsequently, the data was incorporated into a face-to-face survey of a representative sample of students with special educational needs at various grade levels. The responses were then subjected to an in-depth thematic analysis, which enabled the identification of the principal dimensions of the feeling of pedagogical inclusion. Six SIP items were conceptualised in a 5-level Likert format. The resulting items were then validated using rigorous psychometric methods, including principal component analysis and Pearson correlation. The Pedagogical Inclusion Sentiment Scale (PIS) exhibits robust internal consistency, as evidenced by a high Cronbach's alpha coefficient ($\alpha = 0.83$), ensuring that items consistently assess the concept of inclusion. The factor analysis yielded two principal factors, which collectively accounted for 60% of the total variance.

School Inclusion Scale

In order to assess the Sense of School Inclusion Scale (SIS), a comparable methodology was employed to develop the SIS scale (Booth & Ainscow, 2002), which resulted in a 12-item, 5-level Likert scale. The SIS items were subjected to rigorous psychometric validation, employing principal component analysis and Pearson correlation. A high Cronbach's alpha coefficient ($\alpha = 0.85$) indicates strong internal consistency, thereby guaranteeing that the items reliably measure the concept of school inclusion. The results of the factor analysis indicate the presence of three principal factors, which collectively account for 65% of the total variance.

Statistical Analysis

All the variables studied were summarised using descriptive analyses. A one-factor ANOVA variance test was then performed to compare the pre- and post-tests of the variables related to feelings of inclusion, psychological well-being and self-esteem, and a percentage change was calculated using the formula (post-test-previous)/previous *100 if the difference between the pre- and post-tests was significant. A Bonferroni-corrected repeated measures ANOVA test was then performed to compare the effects of each pair of variables between the three groups (control, EPA, EPA+ para-athletes). Finally, a Pearson correlation test was performed to assess the strength of the relationships between the variables studied.

Results

This section presents a three-stage analysis. Firstly, the study presents descriptive data, including the mean and standard deviation of SPI, SSI, psychological well-being and self-esteem, before and after the implementation of the experimental protocol. Subsequently, the study analyses the observed variations between the three groups of participants, both before and after the intervention. Finally, the study examines the nature of the correlations between the different variables measured.

Evolution of educational inclusion and psychological variables

Table 1 shows the comparative analysis of the effects of three different interventions on parameters related to educational inclusion and psychological variables. The control group showed no significant change in any of the variables studied. However, there was a significant decrease in SIP (-14 %, $p = .004$). The Adapted PE group demonstrated notable enhancements in a number of variables. There was a statistically significant increase in self-esteem ($p < .000$), autonomy ($p = .009$), and environmental mastery ($p = .000$) by 3.25 %, 2.775 %, and 4.151 %, respectively. Furthermore, there was a notable increase in personal growth, with a 3.432 % increase ($p = .002$). The group that benefited from the combination of Adaptive PE and Para-Athletics demonstrated significant improvements in nearly all measured dimensions. There was a statistically significant increase in self-esteem ($p < .000$), with a mean change of 3.73 %. Additionally, there were notable improvements in autonomy ($p < .000$) and environmental mastery ($p < .000$), with mean changes of 7.646 and 8.824, respectively. Furthermore, this group demonstrated noteworthy enhancements in their positive

Table 1. Evolution of pedagogical and school inclusion, self-esteem and psychological well-being before and after intervention

Variables	Experimental protocol											
	Control (n=33)			p	APE (n=31)			p	APE+ Para-Athletics (n=32)			p
	Before	After	F		Before	After	F		Before	After	F	
SPI	3.57±0.65	3.07±0.71	8.862	.004	3.68±0.83	3.98±1.04	1.098	.299	3.83±0.70	4.69±0.40	27.866	.000
SSI	2.82±0.59	2.84±0.62	0.041	NS	3.29±0.63	3.82±0.87	3.328	.073	3.30±0.52	4.40±0.54	59.257	.000
Self-Esteem	1.98±0.45	2.04±0.47	0.057	NS	2.19±0.42	3.25±0.58	66.852	.000	2.25±0.50	3.73±0.50	139.932	.000
P-WB Autonomy	2.18±1.40	2.18±1.40	0.000	NS	4.16±1.44	5.39±1.84	-2.775	.009	4.16±1.74	6.50±0.76	-7.646	.000
P-WB Environmental mastery	2.88±1.49	2.76±1.54	0.318	NS	3.45±1.52	5.42±1.96	-4.151	.000	3.72±1.53	6.31±0.78	-8.824	.000
P-WB Personal growth	2.27±1.26	2.52±1.25	-0.713	NS	2.81±1.64	4.42±2.00	-3.432	.002	3.03±1.75	5.34±1.45	-6.136	.000
P-WB Positive relations with others	2.48±1.52	2.21±1.27	0.727	NS	2.84±1.63	4.74±2.02	-4.077	.000	3.28±1.82	5.91±1.23	-7.501	.000
P-WB Purpose in life	2.73±1.86	2.48±1.44	0.643	NS	2.94±1.93	5.90±1.68	-7.178	.000	3.47±1.87	6.28±1.37	-6.378	.000
P-WB Self-acceptance	2.39±1.68	2.88±1.58	-1.174	NS	2.61±1.73	4.26±2.28	-3.437	.002	2.78±1.62	5.13±1.98	-5.850	.000

P-WB. Psychological well-being, All results are written as mean±standard deviation

interpersonal relationships (+7.501, $p < .000$) and personal growth (+6.136, $p < .000$).

Effects of programs on educational inclusion and psychological parameters

Tables 2 and 3 show the results of an analysis of variance (ANOVA) used to assess the impact of different interventions on key variables related to educational inclusion and psychological well-being. The results show that all variables show statistically significant differences between groups, with p-values below 0.05. For example, the "self-esteem" variable has an F-value of 84.026 with a p-value less than 0.001, indicating a statistically significant difference between groups. Similarly, autonomy and environmental mastery show substantial differences, with high F-values of 85.724 and 39.269, respectively, and p-values less than 0.001. These results underline the effectiveness of interventions, particularly those involving adapted physical education (EPA) and Para-Athletics, in improving participants' perception of inclusion and psychological well-being.

Relationship between educational inclusion parameters and psychological

The following table presents the correlation coefficients between a number of variables related to the field of educational inclusion and the construct of psychological well-being. The variables examined include the sense of pedagogical inclusion (SPI), the sense of school inclusion (SSI), self-esteem and various dimensions of psychological well-being, such as autonomy, environmental mastery, personal growth, positive relations with others, Purpose in life and self-acceptance. The results demonstrate a notable positive correlation between variables, with the majority of correlations exhibiting a high level of statistical significance ($p < 0.01$). For instance, self-esteem demonstrates robust correlations with SSI ($r = 0.711$, $p < 0.01$) and purpose in life

Table 2. Effect of programs on pedagogical and school inclusion, as well as on self-esteem and psychological well-being, according to the 3 intervention modes

Variables	ANOVA I				
	SC	df	Carré moyen	F	p
SPI	28.982	2	14.491	30.950	.000
SSI	36.161	2	18.081	49.165	.000
Self-Esteem	33.489	2	16.745	84.026	.000
P-WB Autonomy	367.354	2	183.677	85.724	.000
P-WB Environmental mastery	168.935	2	84.467	39.269	.000
P-WB Personal growth	109.262	2	54.631	22.360	.000
P-WB Positive relations with others	168.553	2	84.277	32.563	.000
P-WB Purpose in life	187.625	2	93.812	30.204	.000
P-WB Self-acceptance	57.293	2	28.646	7.804	.001

SC. Sum of Squares Type III, P-WB. Psychological well-being, SPI. Sense of Pedagogical Inclusion, SSI. Sense of school inclusion, NS. Not Significant, Significant $p < .05$

Table 3. Pairwise comparison of variables on pedagogical and school inclusion, self-esteem and psychological well-being according to the 3 intervention modes

Variables	Control (n = 33)		APE (n = 31)		APE+ Para-Athletics (n = 32)	
	APE	APE+ Para-Athletics	Control	APE+ Para-Athletics	Control	APE
SPI	.000	.000	.000	.002	.000	.002
SSI	.000	.000	.000	.020	.000	.020
Self-Esteem	.000	.000	.000	.003	.000	.003
P-WB Autonomy	.000	.000	.000	NS	.000	.000
P-WB Environmental mastery	.000	.000	.000	NS	.000	.000
P-WB Personal growth	.000	.000	.000	NS	.000	.000
P-WB Positive relations with others	.000	.000	.000	.019	.000	.019
P-WB Purpose in life	.000	.000	.000	NS	.000	.000
P-WB Self-acceptance	.000	.001	.000	NS	.001	.001

P.WB. Psychological well-being, SPI. Sense of pedagogical inclusion, SSI. Sense of school inclusion, ** Very Significant ($p < .01$), * Significant ($p < .05$)

($r = 0.632$, $p < 0.01$), suggesting that elevated levels of school integration and well-defined Purpose in life are associated with enhanced self-esteem. Moreover, autonomy is significantly correlated with environmental mastery ($r = 0.833$, $p < 0.01$), indicating that individuals who perceive themselves as autonomous tend to also perceive a high level of control over their environment. Moreover, the correlations illustrate the interconnectivity of the diverse dimensions of psychological well-being, emphasising the comprehensive scope of these concepts.

Discussion

The findings of this study underscore the significant impact of adapted physical education (APE) in conjunction with para-athletics on the development of mental skills in students with motor impairments. It is noteworthy that participants in both APE and para-athletics programmes demonstrated improvements in skills such as stress management, self-confidence and concentration. These findings lend support to the proposition that engagement in structured physical activities serves as an efficacious conduit for the cultivation of psychomental skills, which are indispensable for navigating the quotidian challenges faced by these young individuals (Bouchard et al., 2012; Donnelly et al., 2016). Moreover, the findings of this study are in alignment with those of previous research, which demonstrate that when physical activities are tailored to the specific requirements of students, they not only enhance their physical abilities but also have a considerable impact on their mental well-being (Shields & Synnot, 2016). The results of recent research also corroborate these findings, indicating that APA is an effective method for reducing anxiety symptoms in young people with special educational needs (Anker et al., 2024). The results corroborate the psychosomatic and cognitive benefits observed in the aforementioned study.

The participants displayed enhanced concentration, particularly those involved in para-athletics. The capacity to sustain attention and focus on particular tasks is of paramount importance, not only in the context of sporting activ-

Table 4. Correlation matrix for variables relating to pedagogical and school inclusion, self-esteem and psychological well-being

Variables	1	2	3	4	5	6	7	8	9
1 SPI	1								
2 SSI	.603**	1							
3 Self-Esteem	.542**	.711**	1						
4 P-WB Autonomy	.592**	.463**	.580**	1					
5 P-WB Environmental mastery	.552**	.408**	.505**	.833**	1				
6 P-WB Personal growth	.434**	.392**	.459**	.565**	.565**	1			
7 P-WB Positive relations with others	.440**	.345**	.485**	.659**	.587**	.626**	1		
8 P-WB Purpose in life	.442**	.547**	.632**	.672**	.636**	.498**	.532**	1	
9 P-WB Self-acceptance	.319**	.275**	.305**	.383**	.253*	.476**	.419**	.244*	1

P.WB. Psychological well-being, SPI. Sense of pedagogical inclusion, SSI. Sense of school inclusion, ** Very Significant ($p < .01$), * Significant ($p < .05$)

ities, but also with regard to academic achievement and the effective management of daily activities (Camacho-Morles et al., 2021). Prior research has indicated that regular participation in a sport, particularly when adapted to the individual's abilities, is associated with enhanced attention regulation and increased concentration (Hut et al., 2023; Vaughan & Laborde, 2021; Zimmerman, 2006). The aforementioned cognitive abilities facilitate more effective navigation of often challenging school environments, thereby enabling the realization of full academic potential (Camacho-Morles et al., 2021). The findings of this study serve to reinforce the argument that APE and para-athletics programs confer benefits upon students in a number of ways. In addition to promoting physical development, these programmes have been demonstrated to markedly enhance students' cognitive abilities.

A further central aspect of this study is the significant improvement in the sense of pedagogical and school inclusion among students participating in EPA and para-athletics programmes. A notable difference was observed in the participation of BEP students in physical sports activities, as evidenced by one study (Ben Rakaa et al., 2024b). Furthermore, the perceptions of the students' teachers and their sense of pedagogical competence play a pivotal role in determining whether these students are integrated into the classroom (Ben Rakaa et al., 2024c, 2024a). The enhanced feeling of inclusion observed in this study is of the utmost importance for students with motor impairment, who frequently encounter physical, social and pedagogical obstacles that restrict their active involvement in the conventional school environment (Sammon et al., 2020). The findings of this study suggest that students in the experimental groups, particularly those engaged in para-athletics, not only reported a heightened sense of acceptance from their peers but also exhibited enhanced inclusion within the school community (Prince & Hadwin, 2013). This sense of inclusion extends beyond mere physical presence in the classroom and encompasses active and meaningful participation in educational activities, which is vital for the emotional and social well-being of students with impairment (Organization World Health, 2003). The findings of a recent study have confirmed that students with MD have experienced an improvement in their interpersonal relations and a greater sense of belonging (Prince & Hadwin, 2013).

The observed correlations between mental abilities and the feeling of being included in school serve to highlight the importance of LFS and para-athletics programmes for the overall well-being of students with motor impairment. The results demonstrate a significant correlation between enhanced self-confidence and commitment – two pivotal skills for academic and personal success – and an improved perception of academic inclusion (Prince & Hadwin, 2013). The enhancement of these skills provides students with the requisite tools to effectively navigate the social and academic challenges they encounter, thereby optimising their overall educational experience and long-term success (Song & Song, 2023). Furthermore, recent research findings suggest that APA programmes incorporating competitive elements, such as para-athletics, have a notable impact on enhancing students' psychosocial abilities (Puce et al., 2023). The results corroborate our findings and underscore the necessity of integrating these interventions into educational systems to advance global school inclusion, as evidenced in our study.

Furthermore, the findings of this study underscore the potential benefits of integrating APE with competitive sports such as para-athletics. This integration could enhance the development of mental skills and promote educational inclusion at both pedagogical and school levels. The combined APE + school para-athletics programme demonstrated the most substantial improvements in students, indicating that the integration of inclusive competitive sports is an efficacious approach to developing skills such as resilience, goal setting and mental preparation (Martín-Rodríguez et al., 2024; Weinberg & Gould, 2023). Furthermore, research indicates that competitive sports offer students with MD particular opportunities to challenge themselves, expand their abilities and improve their self-confidence while facilitating greater social inclusion (Ballas et al., 2022). This perspective is corroborated by evidence indicating that competitive sports, when adapted to the needs of MD students, have a significant positive impact on their general well-being and engagement at school (Shapiro & Martin, 2014).

Inclusion in EPA and para-athletics programmes also appears to have long-term effects on psychological well-being, as evidenced by improvements in stress management and control of distractions. Such abilities facilitate the reconciliation of academic expectations with the obstacles associated with the disability (Camacho-Morles et al., 2021). The results demonstrate that these programmes provide a structured and supportive environment in which students can not only enhance their physical capabilities but also cultivate effective strategies for managing stress and distractions, which are essential for their academic success. This observation is corroborated by previous research, which also confirms that interventions combining physical activity with clear goals and high expectations are particularly effective in developing resilience and stress management skills in young people with impairment (Shields & Synnot, 2016). Furthermore, recent research has demonstrated the long-term advantages of structured physical activity programmes, which not only enhance physical health but also foster psychological resilience and improve academic performance (Andermo et al., 2020).

Conversely, this study underscores the significance of APE and para-athletics in the advancement of physical capabilities and their indispensable function in fostering the mental and social well-being of students with motor impairment. The results demonstrate that these interventions should be regarded as indispensable components of any strategy designed to facilitate school inclusion and enhance the quality of life of students with special educational needs. The implications of these results are significant and suggest that schools should integrate APE and para-athletics programmes into their curricula in a more systematic manner in order to optimise the benefits for all students, particularly those with mobility impairments.

Conclusions

The findings of this study demonstrate the significant impact of adapted physical education (APE) programmes and inclusive school sports on the perception of pedagogical and school inclusion, psychological well-being and self-esteem among students with motor impairment. The results demonstrate that students who engage in these programs exhibit notable enhancements in these domains when

compared to those who attend conventional physical education classes. The results of the statistical analyses indicate that interventions combining APE and para-sport activities are particularly effective in improving self-esteem, feelings of inclusion and various dimensions of psychological well-being, including autonomy, mastery of the environment and positive relations with others. Such programmes facilitate not only better inclusion in the school environment for these students, but also contribute to their personal development and general well-being. The study, therefore, emphasises the necessity to maintain and extend these inclusive methodologies, which appear to be fundamental instruments for enhancing the quality of life and social inclusion of pupils with motor impairment. The results therefore indicate the necessity for a more comprehensive integration of adapted physical activity and para-sport into school curricula, with the objective of facilitating more efficacious school inclusion and enhanced psychological well-being for these young individuals.

Although the present study focused on a three-month period, existing literature suggests that the improvements observed in psychological well-being and sense of inclusion may persist beyond the intervention period, provided students continue to participate in adapted physical activities. Further research is required to test this hypothesis. In the Moroccan context, where the infrastructure for inclusive education is still under development, the integration of adapted physical activity plays a pivotal role in enhancing physical abilities and eliminating residual social and educational obstacles. The Moroccan experience offers a valuable case study that illustrates how inclusive education programmes can be adapted to overcome the aforementioned challenges. In order to optimise the effectiveness of APA programmes, it is recommended that educational establishments implement a system of ongoing training for educators on the most effective methodologies for inclusion. Furthermore, the involvement of parents in the process, for instance through their attendance or participation in particular activities, can serve to reinforce the student's commitment and foster a favourable environment within the home.

Conflict of Interest

If the authors have any conflicts of interest to declare.

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Сприяння інклюзії та благополуччю через інклюзивне фізичне виховання та параспорт: Застосування підходу щодо підлітків з порушеннями моторики

Омар Бен Ракаа[1ABCD], Мустафа Басірі[1ABCD], Саід Лотфі[1ABCD]

[1]Університет Хасана II в Касабланці

Авторський вклад: A – дизайн дослідження; B – збір даних; C – статаналіз; D – підготовка рукопису; E – збір коштів

Реферат. Стаття: 9 с., 4 табл., 47 джерела.

Мета дослідження. Мета дослідження полягала у вивченні впливу залучення учнів з порушеннями моторики (ПМ) до адаптованого фізичного виховання (АФВ) та шкільної параатлетики на їхнє відчуття інклюзії в педагогічному та шкільному середовищі, а також на їхнє психологічне благополуччя та самоповагу.

Матеріали та методи. У дослідженні взяли участь 96 учнів віком 16,79 ± 0,87 років, які мають порушення моторної функції та навчаються в державних школах Марокко. Учнів було розподілено на три групи відповідно до параатлетичної класифікації: 30 % (сімейство з 30), 40 % (сімейство з 40) та 30 % (сімейство з 50). Учасників дослідження розподілено за методом рандомізації на три групи: контрольна група без спеціальної програми; група, яка займалася за програмою АФВ (24 заняття); а також третя група, яка виконувала програму АФВ та додаткові заняття з параатлетики (24 заняття), включаючи змагання впродовж трьох місяців. Проведення оцінювання здійснювалося на етапах перед- та постінтервенційного періодів. Для визначення рівня самоповаги, психологічного благополуччя, а також відчуття інклюзії в педагогічному та шкільному середовищі використовували відповідні шкали.

Результати. Отримані дані свідчать про поліпшення відчуття інклюзії в педагогічному та шкільному середовищі, психологічного благополуччя та самоповаги в учнів, які залучалися до програм АФВ та параатлетики, порівняно з контрольною групою. Група, яка брала участь як у заняттях з АФВ, так і в параатлетиці, продемонструвала найбільш значний прогрес за результатами цього дослідження.

Висновки. Представлені результати дозволяють стверджувати, що систематична інтеграція адаптованого фізичного виховання та інклюзивного спорту, зокрема параатлетики, до шкільних навчальних програм є ключовим елементом у сприянні інклюзії, благополуччя та самоповаги серед учнів з порушеннями моторики.

Ключові слова: інвалідність внаслідок порушення моторики, психосоціальний розвиток, освітня рівність, стратегії шкільної інклюзії, адаптовані види спорту, адаптована фізична активність.

Information about the authors:

Ben Rakaa, Omar: omarbenrakaa@gmail.com; https://orcid.org/0000-0002-2181-5247; Multidisciplinary Laboratory in Education Sciences and Training Engineering (LMSEIF), Sport Science Assessment and Physical Activity Didactic, Normal Higher School (ENS-C), Hassan II University of Casablanca, 19, Rue Tarik Ibnou Ziad, Casablanca 21100, Morocco.

Bassiri, Mustapha: m.bassiri@enscasa.ma; https://orcid.org/0000-0002-1077-8057; Multidisciplinary Laboratory in Education Sciences and Training Engineering (LMSEIF), Sport Science Assessment and Physical Activity Didactic, Normal Higher School (ENS-C), Hassan II University of Casablanca, 19, Rue Tarik Ibnou Ziad, Casablanca 21100, Morocco.

Lotfi, Said: lotfisaid@gmail.com; https://orcid.org/0000-0002-0008-6145; Multidisciplinary Laboratory in Education Sciences and Training Engineering (LMSEIF), Sport Science Assessment and Physical Activity Didactic, Normal Higher School (ENS-C), Hassan II University of Casablanca, 19, Rue Tarik Ibnou Ziad, Casablanca 21100, Morocco.

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