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Research Centre on Child Studies

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Universidade do Minho
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Child Studies is an international peer-reviewed journal which publishes empirical and theoretical articles focusing on children's social contexts and relations in everyday life, taking a holistic perspective. This journal is a multidisciplinary forum for sharing and discussing issues such as children's rights, development and well-being, generational and intergenerational relations, and the broad societal, political and cultural aspects impacting children's lived realities.



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**EDITORIAL – BEING A CHILD IN A COMPLEX AND
VIOLENT WORLD**

**EDITORIAL – SER CRIANÇA NUM MUNDO COMPLEXO E
VIOLENTO**

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This is the third issue of *Child Studies*, a scientific journal published since 2022 by the Research Centre on Child Studies (CIEC) of the Institute of Education at the University of Minho. Overall, the empirical and/or theoretical studies published by *Child Studies* aim at substantiate the interdisciplinary and the multidisciplinary dimensions, and reflect the research on children and childhood from a holistic perspective that CIEC researchers carry out in their daily work. The papers published by *Child Studies* focuses on children's social contexts and practices, children's health, the environment and physical education, childcare professionals, pedagogical resources and cultural productions for children, lines that also structure CIEC's research.

This pluralistic approach, in its foundations and methods, converges in the attempt to understand and describe the complex phenomenon of what childhood is and how it develops, and what it means to be a child in a dizzyingly complex and often violent world, where the most vulnerable can easily become victims of the most powerful or ambitious forces that characterise our societies.

The five studies that make up this new issue of *Child Studies* bear witness precisely to the diversity of perspectives that research on and with children requires. The three studies on applied research with groups of children are diverse in their foundations and objectives, as well as their geography. They provide cases from three different continents.

The first article, "Public policies for preschool education in Angola: from formulation to implementation, what has changed?", by Narciso Dumbo and Teresa Sarmiento, focuses mainly on public policies for preschool education in Angola. The authors' analysis of different legal, normative and political texts shows that, although

there is government interest and commitment, the development and implementation of public policies, based on different projects, plans and programmes, are still not properly aligned with international agendas that strive for social justice and seek, at all costs, to mitigate inequalities in access to education. And official data, as the authors emphasize, proves this: “there is a disparity in access related to the child’s social group, where out of 10 children from medium and high-income families, 7 to 8 attend preschool, while out of 10 children from low-income families, only 2 children have attended (INE, 2017)”.

The second article, entitled “Application of the Decole Programme in a Natural Classroom Situation: Effects on Emergent Literacy Skills”, reveals the results of the implementation of a programme especially conducive to emergent literacy. Gatto and Barrera critically describe the implementation of the Decole Programme in a pre-school classroom with 53 Brazilian children. Before and after the intervention, the participants’ phonological awareness, vocabulary, listening comprehension and letter knowledge skills were assessed. The results of this study, implemented using a quasi-experimental methodology and quantitative data analysis using descriptive and inferential statistics, indicated the effectiveness of the Programme, “when applied in a natural classroom situation and by a properly trained and prepared teacher, for the development of emergent literacy skills, thus contributing to the scientific evidence of the use of theoretically based teaching methodologies”.

In “Efficacy of metacognitive intervention programme on reading comprehension in third grade students”, the third article, Ferreirós, Enríquez, Rodríguez and Rosell reflect on a reading comprehension programme implemented with 33 students from a third-grade class in the city of Ourense, Spain. It was a study with a purposive sample to respond to a specific situation in a classroom with students at risk of learning difficulties. The researchers conclude that “The group that received the intervention improved their inhibitory measures from pre-intervention to post-intervention and follow-up, producing an interactive effect”, as well as “As a result of the intervention, reading performance scores increased from pre-intervention to post-intervention and follow-up, with reading comprehension performance scores equalising in both groups”.

In the fourth article, “Sail away, save a whale: ocean awareness in children’s books and picture books”, Maria da Silva Martins proposes a close reading of three books for children: *The Whale Watchers* (2022), written by Dougie Poynter and illustrated by Amberin Huq, *Calling the Whales* (2023), written by Jasbinder Bilan and illustrated by Skylar White, and *The Tale of the Whale* (2022), written by Karen Swann and illustrated by Padmacandra. This is a study that takes an original approach to the aesthetic and educational aspects of children’s literature. Emphasizing the topics of environmentalism and activism, particularly frequent themes in a particular contemporary publishing segment, it accentuates the powerful message of these aesthetically pleasing volumes and proposes a reflection on their contributions to ecoliteracy / environmental literacy and pedagogy.

Finally, in the fifth article “Biopsychosocial paediatric nursing interventions in the adolescent diagnosed with type 1 diabetes mellitus: a literature review”, Vieira et al. report on a study that aimed to identify and reflect on the interventions of nurses

specialising in Child and Paediatric Health, who should consider the adolescent with type 1 Diabetes Mellitus (DM1) in their macrosystem and that of their family. The nurse's decisive intervention in the context of the chronic disease in question covers the psychological, biological and social domains, and so it is concluded that "The way nurses perform their role will directly influence the involvement of adolescents and their families in their treatment, as the process of becoming a teenager may bring with it the appetite for some less appropriate behaviours from the point of view of health promotion in diabetes".

Attentive to and interested in the diverse and sustained treatment of issues relating to children and/or childhood, *Child Studies* will continue to focus on publishing quality, innovative and original articles that problematise the different lines of research already mentioned, which contribute to the production of holistic knowledge about children, as well as to the expansion and consolidation of child studies, both nationally and internationally.

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**PUBLIC POLICIES FOR PRESCHOOL EDUCATION IN
ANGOLA: FROM FORMULATION TO IMPLEMENTATION,
WHAT HAS CHANGED?**

**POLÍTICAS PÚBLICAS PARA A EDUCAÇÃO PRÉ-ESCOLAR EM
ANGOLA: DA FORMULAÇÃO À IMPLEMENTAÇÃO, O QUE
MUDOU?**

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Abstract

This text seeks to reflect on the nature of the formulation of the current public policy for preschool education in Angola. Based on documentary analysis of the main official and legislative documents, we see the involvement of the state in regional and international challenges has increased the development of a set of policy texts directed at children's rights. Thus, the question arises as to whether the public policy for preschool education, fragmented in normative instrumentalization and in national development programmes and plans, mimics and complies with the international Agendas, or if they are functional and indicative of social justice in education that allows for the mitigation of inequalities in access, especially for vulnerable children, in a context where out of 10 children from low-income families, only two children have guaranteed access to attendance.

Keywords: Children's rights, preschool education, public policies

Resumo

Este texto procura refletir sobre a natureza da formulação da atual política pública para a educação pré-escolar em Angola. Com base na análise documental dos principais documentos oficiais e legislativos, verifica-se o envolvimento do Estado nos desafios regionais e internacionais aumentou o desenvolvimento de um conjunto de textos políticos voltados para os direitos da criança. Assim, coloca-se a questão de saber se as

políticas públicas de educação infantil, fragmentadas na instrumentalização normativa e nos programas e planos nacionais de desenvolvimento, mimetizam e cumprem as agendas internacionais, ou se são funcionais e indicativas de justiça social na educação que permita a mitigação das desigualdades no acesso, especialmente para crianças vulneráveis, num contexto em que, em cada 10 crianças de famílias de baixos rendimentos, apenas duas crianças têm acesso garantido.

Palavras-chave: Direitos da criança, educação pré-escolar, políticas públicas

Introduction

In Angola, children have gained prominence in recent years, especially after the achievement of peace in 2002. This is signalled by constitutional recognition (Constitution of the Republic, CR, 2010) based on the concern for protecting their rights focused on their best interests and holistic development. This constitutes a tripartite responsibility of the family, state, and society, meaning that ensuring children's rights should be a systemic commitment of all existing institutions (point 6, article 35, p. 80). Since this period, several legal and political instruments have been produced to define rules and guiding principles for the protection and holistic development of children. At the legal level, Law No. 25/12 of August 22 stands out, and at the political level, the 11 Commitments to Children. In this text, we did not intend to analyse the general policies that have been implemented to fulfil children's rights, but rather focus on early childhood education policies, based on the perspective that children have a right to care and education from birth. Early childhood education, referred to in Angola as preschool education, ensured by the Basic Law of the Education and Teaching System, LBSEE, No. 17/16 of October 7, amended by Law No. 32/20 of August 12, is conceived as a subsystem that aims to serve children from 0 to 5 years of age.

In the scope of childhood sociology, we integrate the reflection within the "integrated systemic approach to policy development and implementation" (see UNESCO 2002; Sarmiento, 2015; UNICEF, 2019; Haddad, 2006; Cameron & Moss, 2020), seeking to inventory the political texts produced in various periods and their impact on the expansion and development of preschool education in terms of the realisation of the principles of non-discrimination and equity. This intent stems from the conceptual understanding of policy, which according to Dye (2000, p.2-3), "is whatever governments choose to do or not to do," implying "[...] the processes by which public policy was determined [...]" and "[...] involves a description of the content of public policy" in order to "discover how things work" (Ozga, 2000, p. 84). These assumptions serve, on the one hand, to argue that early childhood education as a social problem is subject to the governments' choice of whether or not to prioritise it on their political agenda; on the other hand, the ambivalence of the approach serves to delimit our analysis, focusing on the processes of policy formulation (policy making), referencing the content and context

in which it was determined. We articulate the analysis with the logic of *policy cycle* theory defended by Stephen Ball's, Bowe & Gold (1992).

The authors propose a continuous political cycle, consisting of five arenas: the context of influence, the context of text production, the context of practice, the context of outcomes, and the context of political strategies (Ball, 1994; Bowe, Ball & Gold 1992). The contexts are interconnected, expressing non-linear and non-sequential periods and do not have "a temporal or sequential dimension" (Vilarinho, 2013, p. 283). This model is a "framework for analysing the trajectory of social and educational policies" (Mainardes, 2006, p. 48), in a way that "values the complex and conflictual nature of educational policy [...]" or rather, "[...] opens up the possibility of understanding the complexity of the investigated policy, the plurality and dialectical nature of the political process, and the interests and meanings given by different actors" (Vilarinho, 2013, p. 283).

The text has three main axes: in the first part, we situate the place of preschool education through a historical review of educational reforms, specifically focusing on the production of political texts; in the second part, we present a summary of some official data on access; and finally, a brief critical analysis of the meaning of these data in terms of equality and opportunities for children to enjoy their right to quality care and education.

Preschool education policies in light of Educational Reforms

Educational policy in Angola, constructed from a diachronic historical perspective, can be understood through a periodisation, specifically post-independence, which points to a different social, economic, and political context of the country. This involves the transition from a socialist to a democratic state, from one-party rule to multi-party democracy, from a state-centred economy to a market economy, and an escalation of armed conflict. However, the social and educational problems resulting from the colonial legacy and the "direct impact of political-military instability and economic-financial recession" (MED, 2001, p. 11) - such as rural exodus and extreme poverty, lack of human resources (qualified teaching staff at all levels), lack of material and pedagogical conditions (schools, teaching materials and textbooks, laboratories) - influenced the definition of new educational projects that could address these situations on the part of the state.

Thus, two educational projects were developed and implemented: the first, reform approved in 1977 and implemented from 1978 (Decree-Law No. 40, May 14, 1980), and the second, approved in 2001 by the Basic Law of the Education and Teaching System, No. 13/01, December 31, with its implementation following a schedule of activities, as per Decree No. 2/05, January 14. The discretionary reasons, objectives, system composition, pedagogical organisation, and other processes of these educational projects will not be the focus of this text (see Zau 2005; Anzacote 2010; Binji 2013; MED, 2001; Ministry of Planning, 2007), however, it is important to make reference to the space and production of preschool education policies.

In the 1978 education system in Angola, preschool education was not recognised and was associated with access to compulsory classes in primary education. In other words, attending one year in the initiation class corresponded to preschool education, which was mandatory for all children aged 5 or 6. According to Binji (2013, p. 84), based on MED (1993), there was "a designation of Initiation defined as a provisional structure; it assumed the role of preschool education," and its main purpose was to promote the psychomotor and social development "of 5-year-old children in order to facilitate their entry into the first grade of the I level of Basic Education."

During this period, preschool education was under the supervision of the Ministry of Social Affairs, which was responsible for "organising and directing the work of institutions dedicated to working with preschool children enrolled in nurseries (up to 3 years old) and kindergartens (from 3 to 6), with the last year of this period (from 5 to 6 years old) dedicated to the initiation class" (Zau, 2002, p.121). The author also states that the purpose of this entity was to create recreational activities for children, support working families in the care and education of their children, and prepare them for school, with pedagogical assistance from the Ministry of Education.

During this phase, in the early 1980s and late 1990s, the state developed two social programmes targeting preschool education: the Community Child Programme (PIC) and the Community Education Programme (PEC). These programmes were implemented through bilateral agreements with United Nations agencies, bilateral and multilateral agencies, and international NGOs (with a special focus on UNICEF, WFP, WHO, FAO, ADPP, and Cuban and German experts, as well as the Calouste Gulbenkian Foundation). This was due to the absence of childcare centres, qualified staff, a curriculum for early childhood, and the precarious living conditions of many children. With the support of these agencies, the programmes aimed to provide primary health services, nutritional recovery, and advance community-based basic education, particularly for mothers, mostly in rural and peri-urban areas. This included the construction of the first Community Child Centres (CIC) and Child Centres (CI), the development of the first curriculum plans, and the training of early childhood educators at the basic and intermediate levels (MINPLAN, 2007).

Studies by Binji (2013) and Zau (2002) present a historical parallelism of preschool education policy embedded in two distinct features: universal access and social assistance. In terms of universal access, it was based on the policy of expanding the initiation class introduced in primary schools, with organisational, administrative, pedagogical, and methodological aspects functioning in the same model as the primary cycle. This situation had two negative effects. First, it led to the saturation of facilities and the operation of many schools on a triple-shift basis due to the high number of children enrolled in initiation, with many (60%) being over 6 years old. Second, teachers used didactic and pedagogical methodologies "similar to those of primary education" without specific preparation (Government of Angola, 2001, p. 21). Second, there were signs of an expansionist policy in access to preschool education through external support, marked by the presence of international organisations, with a greater emphasis on addressing social issues.

The absence of quantifiable data in official reports from relevant entities and studies on educational policy in Angola regarding the institutional structures of preschool education built under cooperation programmes limits the analysis of its social and educational impact in the post-independence period (MINPLAN, 2007). In 2001, the Angolan state implemented the 2nd Educational Reform through LBSEE No. 13/01, aiming to "ensure the schooling of all children of school age, reduce youth and adult illiteracy, and increase the effectiveness of the education system," in order to readjust the education system to "respond to the new demands for human resource development necessary for the socio-economic progress of Angolan society" (as stated in the preamble of LBSE No. 13/01). The main changes included recognising preschool education as the first subsystem and extending primary education from 4 to 6 years. In this sense, the preschool education subsystem was legitimised as the foundation of education, with the purpose of caring for early childhood during a period of life in which conditioning and psychomotor development activities should take place. According to the first point of Article 13, the subsystem was structured into two cycles: nursery and kindergarten.

The law emerged internationally to address the six challenges for Quality Education for All, known as the Dakar Declaration (2000), which builds on the global commitments of the Jomtien Declaration (1990), as affirmed by then Minister of Education Mpinda Simão:

The political commitment of the Angolan State to Quality Education for All dates back to March 1990, on the occasion of the World Conference on Education for All held in Jomtien (Thailand), which adopted the World Declaration on Education for All: Meeting Basic Learning Needs, signed by the majority of States in the international community and reaffirmed in April 2000 at the World Education Forum held in Dakar (Senegal), which adopted the Education for All Framework for Action until 2015. These two international events defined a broad set of challenges that have been addressed in various ways, where significant collective efforts have been made to provide the means to improve the educational conditions of thousands of children, youth, and adults.

Currently, with the establishment of the 17 SDGs, the Angolan education system has a policy guideline oriented by LBSEE No. 17/16 of October 7, amended by Law No. 32/20 of August 12. This instrument shows an innovative character in recognising the preschool education subsystem as the first level of education. Thus, through Presidential Decree No. 129/17 of June 16, the specific Statute was created and approved, establishing a set of principles and rules that regulate the subsystem.

The period from 2001 until today is characterized by a stage of policy production for children, at an instrumental level, with a general emphasis on children's rights, with the international legal instrument of the Convention on the Rights of the Child being ratified by the Angolan state in 1991. Therefore, we can summarise the public policies for children, starting with the regulations that legitimise preschool education as a fundamental right of the child, particularly the 2010 Constitution of the Republic, Law No. 25/12 of August 22 - the law on the protection and holistic development of the child

- and the 11 Commitments to Children. Then, there are the political instruments that express the government's intentions as outlined in the national education project of 2001, called the Integrated Strategy for Improving the Education System, reaffirmed in the Long-term Development, the Angolan government (2025), in the National Education Development Plan "Educating Angola 2030" and recently incorporated into the National Development Plans (2013-2017; and 2018-2022).

Fundamentals of pre-school education produced within the scope of the right of the child

The Angolan State guarantees a constitutional protection of the fundamental rights of the child circumscribed in article 80 in which the nature of the content is evaluative and guided, in point 2, of a public policy in education that "safeguards the principle of the best interest of the child", meaning "everything that contributes to the defence and security of its integrity, identity, maintenance and development are sound and harmonious" (bridge 3, of article 6, of Law no. 25/12).

Law no. 25/12 aims to define rules and legal principles on the protection and integral development of the child, aiming to strengthen and harmonise the legal and institutional instruments aimed at accrediting the rights of the child. Among several prescriptions, we highlight articles 63 and 74, because they substantiate early childhood education as a right of the child, and should be compulsory and free, and the State may contribute to assistance to parents, as can be explained in the excerpt:

into account the importance of early childhood in the integral development of the child, access to early childhood education should be guaranteed in a compulsory and free manner by the State from the first days of the child's life. The State shall adopt appropriate care plans for parents in the exercise of their responsibilities to educate the child and in the planning of early childhood programmes (art. 63, point one and two).

For its reification, according to article 74, the service of care and education of early childhood (0-5 years), crèches, kindergarten, Community Children's Centres or Free Community Centres, must be available in all areas of the Angolan territory and for all children, especially for the most vulnerable. The document also gives relevance to the initiation class, which appears as a transition class to primary school, ensured by the principle of gratuity, and the services must be of quality:

1. Early childhood services and actions in the area of education, guided by Commitments 4 and 5, in the part reserved for the initiation class, shall be made available in each community by the ministerial department responsible for social assistance and reintegration and by the ministerial department responsible for education, to ensure the development and learning of the child in Angola from the first years of life;
2. Mandatory minimum services shall be ensured, including for the most vulnerable child and child in emergencies, namely:

- a) Quality care and education services for children from 0 (zero) to 2 (two) years of age whose parents work, particularly in the most vulnerable areas.
- b) Community Children's Centres or Free Community Educational Centres, Crèches and other alternative approaches for the child from 3 (three) to 4 (four) years of age, and these services must be accessible and of quality.
- c) In communities without initiation class, the services referred to in the preceding paragraph shall cover the phase of 3 (three) to 5 (five), and these services shall be accessible and of high quality.
- d) Free and quality Initiation Class for the child of 5 (five) years of age, giving priority to the child who has not had access to other types of pre-schools education.

In 2007, the State, together with the national and international social partners, especially the United Nations System, elaborated and assumed the 11 Commitments to the Child that constitute a set of responsibilities to ensure the integral development of the child, based on national and international legal norms on the child. This document covers the totality of the rights of the child, including civil rights and liberties, family environment, alternative care, basic care, health, well-being, education, leisure, cultural activity, and social and criminal protection measures. Considering its nature and objectives, it includes the following concrete matters, each with a special relevance in the life of the child (point 1 of article 49 of Law No. 25/12):

Table1.

The 11 commitments for the child

No. Ord.	Treaty	Designation/Area
1.	Commitment	Life Expectancy at Birth
2.	Commitment	Food and Nutritional Security
3.	Commitment	Birth Registration
4.	Commitment	Early Childhood Education
5.	Commitment	Primary Education and Vocational Training
6.	Commitment	Juvenile Justice
7.	Commitment	Prevention and Reduction of the Impact of HIV/AIDS on Families and Children
8.	Commitment	Prevention and Combating Violence Against Children
9.	Commitment	Social Protection and Family Skills

10.	Commitment	The Child and the Media, Culture, and Sports
11.	Commitment	The Child in the National Plan and the General State Budget

Source: self-elaboration based on Law No. 25/12

In the document, preschool education is ensured through the 4th commitment, encompassing four goals: expanding and improving "in all aspects, the care as well as the education of children aged 0-5 years, the continuation of the initiation class, the extension of programmes aimed at mobilising and educating families and communities," and creating initial and continuous training programmes for educators and child supervisors (11 Commitments to Children, 2011, p. 7).

Preschool education in government policies

In 2001, the Integrated Strategy for Improving the Education System was conceived and developed with the fundamental purpose of presenting the general and specific guidelines, as well as the short, medium, and long-term prognosis of the Education System, with a focus on its subsystems, levels, and modalities of education (Angola, 2001, p.10). The strategy was planned to implement its goals in three phases: 1st Urgency or Emergency - 2001-2002; 2nd System Stabilisation - 2002-2006; 3rd Consolidation and Development of the Education System - 2006-2015. The intervention strategy from 2001 to 2015 proposed, in the expansion and development phase from 2007 to 2015, a programme for the preschool sector with the central axis of "expanding access to early childhood education" through the "expansion of the network of Preschool Education Centres and the provision of non-formal educational opportunities accessible to children from modest families" (ibid, 2001, p. 41). To achieve this objective, two results were determined, each listing a set of activities (projects and programmes) to be carried out, as shown in the following Table 2:

Table 2.

Preschool Education Projects and Programmes/2001

Results	Projects and programmes	Description
Increase in enrolment rate	Preschool education centre creation project	Propose the creation of centres at the municipal level with the effective participation of the private sector, as well as provide credit facilities to private promoters
	Early childhood educator training programme	Train teachers with specific knowledge to "serve the State or the private sector."
	Development and dissemination of ludic and didactic materials project	Produce "pedagogical games" that are linked to the "local and national" context and ensure that the competent entities "prepare the necessary didactic resources."
Proper preparation of the child for integration into formal education	Community-based early childhood education centre creation project	"Non-formal modes of early childhood education will be encouraged through support for grassroots community initiatives [...] The organization and functioning of community centres will be the responsibility of local associations."
	Training programme for centre and day-care animators	Recruit and provide technical support for animators from the communities, with the Early Childhood Education Directorate providing technical support.

Source: Own elaboration based on the Integrated Strategy for Improving the Education System (Angola, 2001, p. 41)

The aspirations of this policy, particularly the projects and programmes for the creation of preschool education centres, teacher training, and the development and dissemination of ludic and didactic materials, have become goals of the Angolan State, integrated into strategic government plans such as the Long-Term Development Strategies for Angola (EDLPA) until 2025, the National Development Plan for Education (PNDE) "Educating Angola 2030," and the Development Plan (2013-2017; 2018-2022). These plans, in addition to having three-dimensional characteristics in terms of objectives, goals, and priority actions or projects (see MPL, 2007; MED, 2016; MEP, 2013; 2018), maintain the ideal of universalizing quality early childhood education, aiming to

contribute to equal opportunities for access by all children, especially those in vulnerable situations. Therefore, it is important to list the six projects until 2030:

Project 1 - Construction and equipping of Kindergartens for the attendance of children in the Initiation Class, in residential conglomerates, prioritising rural areas lacking primary schools. Seek public-private partnerships in schools and kindergartens to provide the Initiation Class;

Project 2 - Construct and equip classrooms with appropriate dimensions for classes with a maximum of 36 children in existing or newly constructed primary schools, allowing for the attendance of the Initiation Class;

Project 3 - Hire certified teachers/educators with mandatory scientific and pedagogical training, in sufficient numbers according to the needs of the preschool education level;

Project 4 - Develop awareness campaigns among parents, guardians, and communities about the social and economic importance of children attending preschool education, as well as the positive impact on family living conditions;

Project 5 - Organise school transportation for children who live more than a thousand meters away from the school;

Project 6 - Create institutional and material conditions to ensure the mandatory and free provision of preschool education and free access to books and school materials.

The preschool education policies outlined in the 21st century reflect, from an ideal and prescriptive perspective, the Angolan State's concern to respond to and address the emerging situations of children aged 0 to 5 who are denied access to quality care and education services – a normative term that is "constructed in specific situations [...] a product of a particular nature and creation" (Moss & Dahlberg, 2008, p. 5) – which implies the "effectiveness of educational and socio-educational responses to support balanced child development" the "quality of pedagogical equipment functioning" and the "quality of technical infrastructural equipment and services provided to the child" (article 41, Presidential Decree No. 129/17).

The nature of the policy production mentioned imposes challenges in using lenses that enable adopting a critical perspective capable of questioning the implementation processes and their impacts on access patterns, especially for children from disadvantaged families, i.e., "To what extent did the policy contribute to improving access standards, opportunities, and social justice?" (Mainardes, 2006, p. 69). In this case, we resort to the official reports published in 2014 by the Ministry of Education (MED) on the national examination for education for all and in 2018 by the National Institute of Statistics (INE) and UNICEF on "Children in Angola: A Multidimensional Analysis of Child Poverty."

Review of official data related to access and preschool education institutions

The recognition of preschool education as a subsystem and level of education, starting with the implementation of the 2nd Education Reform, and the reaffirmation of children's rights in various regulations, with children gaining centrality in public policies, gave the image of a competent welfare state able to practically respond to the problems affecting Angolan children in their daily lives, especially the lack of care and education services in early childhood. However, in practice, from a holistic perspective, child public policy continues to lack the necessary priority. According to the data from the report, "Three out of four children under the age of 18 experience three to seven deprivations at the same time 74.4% of children in Angola suffer from multidimensional deprivations in at least three dimensions out of a total of seven possible deprivations" (Neubourg, Safojan, & Dangeot, 2018, p. 21). The disparity between urban and rural areas is significant, where "the majority of children living in urban areas experience two or three deprivations simultaneously, while in rural areas, most children suffer from five or six dimensions of simultaneous deprivation" (ibid, p. 23).

The quantifiable data on nurseries, kindergartens, and/or community-based childcare centres built as part of programs to expand and develop early childhood education nationwide have stagnated over time. The MED report in 2014 showed that in 2012, there were only a total of 497 preschool education institutions, of which 401 (80%) were state-owned public institutions, 334 (67%) were Community Childcare Centres (CICs), and 67 (13%) were Childcare Centres (CIs), with 97 (20%) being privately owned Childcare Centres. Between 2016 and 2019, according to the report by the Education for All Network-Angola (2020), there was a decrease to less than 40 care institutions (total of 457 institutions). Until 2013, it was estimated that 10% of children aged 0 to 5 attended preschool (INE, 2017). In 2020, the number of childcare centres increased to 1.515, with 1.344 being private and 171 being public. Regarding the number of enrolled children, the data indicates a total of 87.589 children up until the referenced period. Therefore, there is a disparity in access related to the child's social group, where out of 10 children from medium and high-income families, 7 to 8 attend preschool, while out of 10 children from low-income families, only 2 children have attended (INE, 2017).

Access is related to the children's place of residence since care and education services for children aged 0 to 5 are limited to urban and peri-urban areas, with no existence in rural areas (MED, 2014). This fact, for example, prevented Neubourg, Safojan, & Dangeot from including this element in their study, as "the possibility of access to education for 3 or 4-year-olds varies depending on the region. Additionally, 5-year-old children were excluded to avoid overestimation of deprivations associated with the effects of the year of birth" (2018, p. 31).

Based on the same report, "40% of children aged 5 to 11 experience deprivations in the Education dimension," and they "are two years (or more) behind in relation to the corresponding age class [...]" This may be related to the fact that in Angola, a high proportion of children are enrolled late in the first grade" (UNICEF, 2015, cited by Neubourg, Safojan, & Dangeot, 2018).

Critical analysis of public policies for preschool education

Despite the production of legal instruments for the protection and development of children in Angola, idealising their rights - mainly universal access to education through compensatory programmes for one year in the initiation classes - the truth is that, in practical terms, preschool education development programmes continue to lack priority from the State (Education for All Network, 2020), and the social and economic issues faced by children are transferred from one plan to another without effective implementation.

The data presented indicate a contradiction between the intended plan and the practical national plans for early childhood education, often promising equity but promoting exclusion and inequalities in reality. One of the causes lies in the fact that we do not have a "democratic welfare state" (Santos, 2005) capable of asserting itself as the major investor in the social sector. Instead, we continue to witness a state that does not prioritise social programmes targeting children in its policies. This is one of the factors hindering the realisation of children's rights, as Bosisio & Ronfani (2020, p. 1) point out, "The scarce financial resources for the development of child and family policies, due to the systematic neglect of children's rights and family issues, which are not a priority on the political agenda."

Equal opportunity of access reflects the principle of universalisation of access, which implies eliminating "any kind of discrimination in its attendance and implies state action in guaranteeing said universalisation and non-discrimination" (Sarmento, 2001, p. 142). The full access to early childhood education aimed to be achieved by 2030 is only possible, in the words of Rawls (2000, p. 307), if there exists a "set of institutions" that guarantee "similar opportunities for education" and " [...] that treats all students as equals [...], in which essential goods are distributed according to the rules of justice and that promotes cooperation on an equal footing" (Crahay et al., 2003, p.12; see Boliver, 2005, p. 44; italicised in the work).

The basic freedoms and mechanisms of collective redistribution in Angola, focused on public policies for childhood, centred on the rights of opportunities for quality education access, contradict a "system of basic freedoms" that includes or excluded children, as they favour children belonging to a minority of the economically privileged social class in the country. We do not want to disregard the progress made in access, especially through the provision of the compensatory one-year programme in the initiation class, but exclusion and multidimensional inequalities worsen each day, and preschool development programmes continue to remain in the Platonic cave without achieving the expected effects in both agendas or plans. Empirical data highlight a range of problems related to quality access, raising uncertainties about the achievement of the goals targeted for 2030.

In the current context, with many children living in poverty (48%), it seems that the existing programmes were not built through an "interventionist and differentiated nature" (Sarmento, Tomás & Soares, 2004) and do not constitute a social justice anchored in the principle of universal access to quality education without discrimination. Social justice would require "social arrangements that allow everyone to participate as equals in social

life," capable of overcoming 'injustice.' This would involve "dismantling institutionalised barriers" that prevent children in disadvantaged situations from "participating on an equal footing with others as full partners in social interaction," so that they are not "prevented from fully participating by economic structures that deny them the resources they need to interact with others as equals" (Fraser, 2005, p. 92).

Final considerations

The nature of the Early Childhood Education Development programmes in Angola reflects two global contexts of educational policy agendas: the Dakar agenda (2000), focused on Education for All, and the Incheon agenda, aimed at the "framework and action for the implementation of SDG 4." As a result of these agendas, legal instruments for the education system were created in 2001 and 2016, along with instruments for the protection and development of children's rights as enshrined in the UN Convention on the Rights of the Child and the African Charter on the Rights and Welfare of the Child.

However, the data related to the practical and multisectoral preschool development programmes implemented by the Angolan government, as reported in official reports during the period of 2001-2015 and beyond, are scarce, incomplete, and sometimes divergent, lacking precise quantitative mapping. This insufficiency prevents an assessment of the impact of the programmes in terms of efficiency and effectiveness of access, both quantitatively and qualitatively. Nevertheless, the extracted results indicate an unfavourable situation regarding public policies for early childhood education, which continue to remain idealised without receiving the necessary priority from the state, considering the lack of investment allocated to the sector, which amounts to less than 1% of the General Education Budget.

The description of the legal, normative, and political texts underlying children's rights to preschool education does not conclude the analytical scope of the intended public policy analysis for childhood. Instead, it provides substance for the continuation of our study through the collection of empirical data from supervisory entities and institutions providing care and education for children aged 3 to 5 years.

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**APPLICATION OF THE DECOLE PROGRAMME IN A
NATURAL CLASSROOM SITUATION: EFFECTS ON
EMERGENT LITERACY SKILLS**

**APLICAÇÃO DO PROGRAMA DECOLE NUMA SITUAÇÃO NATURAL
DE SALA DE AULA: EFEITOS NAS COMPETÊNCIAS DE LITERACIA
EMERGENTE**

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Abstract

This quasi-experimental study investigated the effects of the DECOLE Programme, applied by a teacher in natural classroom conditions, on pre-schoolers' emergent literacy skills. Fifty-three Brazilian children attending a public preschool participated (average age: 5 years and 7 months; standard deviation: 3.9 months), separated into an Experimental Group (n=30) and a Control Group (n=23). Before and after the intervention, participants' phonological awareness, vocabulary, oral comprehension, and letter knowledge skills were assessed. The results indicate that the groups were equivalent in the pre-test regarding the skills assessed. In the post-intervention, significant differences were observed in favour of the Experimental Group, which participated in the intervention, in phonological awareness, oral comprehension and vocabulary. The results suggest the effectiveness of the DECOLE Programme, when applied in a natural classroom situation, for the development of emergent literacy skills considered highly relevant for learning to read and write.

Keywords: Emergent literacy, intervention, phonological awareness, kindergartners, oral language.

Resumo

Este estudo quase-experimental investigou os efeitos do Programa DECOLE, aplicado por um professor em condições naturais de sala de aula, nas competências emergentes de alfabetização de crianças em pré-escolar. Participaram 53 crianças brasileiras (idade média: 5 anos e 7 meses; desvio padrão: 3,9 meses) que frequentavam um jardim de infância público, separadas num Grupo Experimental (n=30) e num Grupo de Controlo (n=23). Antes e depois da intervenção, foram avaliadas as competências de consciência fonológica, vocabulário, compreensão oral e conhecimento das letras dos participantes. Os resultados indicam que os grupos foram equivalentes no pré-teste relativamente às competências avaliadas. No pós-intervenção, foram observadas diferenças significativas a favor do Grupo Experimental, que participou na intervenção, na consciência fonológica, na compreensão oral e no vocabulário. Os resultados sugerem a eficácia do Programa DECOLE, quando aplicado numa situação natural de sala de aula para o desenvolvimento de competências de literacia emergente consideradas altamente relevantes para a aprendizagem da leitura e da escrita.

Palavras-chave: Literacia emergente, intervenção, consciência fonológica, alunos do jardim de infância, linguagem oral.

Introduction

Research in cognitive psychology dedicated to studies on the importance of linguistic and metalinguistic skills for learning to read and write, has been obtaining relevant results concerning the teaching of written language, highlighting the role of Pre-school Education in the development of emergent literacy skills considered predictors of formal learning of written language (Rohde, 2015; Viana & Ribeiro, 2014; Whitehurst & Lonigan, 2003).

Emergent literacy skills correspond to a set of knowledge, skills and attitudes related to reading and writing that usually develop prior to the formal literacy process and that contribute significantly to the success of this process, such as, for example, knowledge of the alphabet and the conventions and social functions of writing, phonological awareness and vocabulary and oral comprehension skills (NELP, 2008; Viana & Ribeiro, 2014; Whitehurst & Lonigan, 2003).

Rohde (2015) emphasises that these skills must be seen as resulting from a process of bilateral influence of personal skills and conditions provided by family, school and community environments. The author argues that initial literacy skills can be acquired more easily by children as teachers have effective training and knowledge about child development and emergent literacy subjects. However, according to the author, many preschool teachers demonstrate a lack of knowledge about literacy development, which makes them unable to provide and develop these skills in children.

Before children can read and write, they need to understand how printed language works. The emergent literacy model proposed by Rohde (2015), called the Comprehensive Emergent Literacy Model (CELM), includes three components, each of which is described as composed of complex developmental processes. The model also represents the interrelationships between the components and emphasises the importance of culture and community in the development of emergent literacy skills. Thus, in CELM, each proposed component has its own development sequence and contributes to the development of the other components, showing the importance of recognising the environment in which children and their families live in this development.

The first component of the CELM model is “Print awareness”, which comprises knowledge of the alphabet and concepts about written language, such as book handling skills, knowledge about writing orientation and differentiation between text and drawing. The second component is “phonological awareness” which comprises the mastery of rhymes, alliteration, oral segmentation of words into syllables and phonemes and fusion of syllables and phonemes into words. According to the model, the interaction between the first two components occurs through the correspondence skills between letters and sounds and the behaviour of invented writing. The third component of the model is “oral language” which comprises vocabulary, prior knowledge and communication and listening skills. This component, in turn, interacts with the “print awareness” component through the skills of comprehension strategies, perception of similarities and differences between oral language and written language and grammatical skills. The interaction between the components “oral language” and “phonological awareness”, in turn, would occur through the processes of lexical restructuring. Lexical restructuring represents the reorganization of language by sound. In the normal course of development, children's phonological representations become increasingly segmented and sharply specified in terms of phonetic features. However, children's ability to construct the organisational structure of speech sounds depends also on the size of their vocabulary. Children with limited vocabulary, because of oral language deficiencies, will have more difficulty constructing a system of phonemes and morphemes. Language development is a fundamental component of initial literacy learning, both in its communicative and social interaction aspects, and for the acquisition of knowledge and new concepts. A child's familiarity with language and vocabulary is strongly linked to their later literacy success. Knowledge of the meaning of words (vocabulary) helps children reflect on their phonological representations.

Studies show that shared book reading contributes to the development of crucial preconditions for learning to read and write, that is, before children learn grapheme-phoneme correspondences. Wesseling et al., (2017) report positive effects of shared book reading on the expressive vocabulary and grapheme awareness of preschool children.

Children who have teaching restrictions and/or difficulties in one or more of the afore mentioned initial literacy skills may experience reading impairments and difficulties (Catts et al., 2015; Hulme & Snowling, 2013; Shanahan & Lonigan, 2010). There is now very strong evidence that learning to appreciate the relationship between spelling and sound is fundamental in the early stages of reading acquisition (Lervåg et al., 2017).

Longitudinal studies indicate that children who have more developed levels of linguistic skills (vocabulary and oral comprehension), metalinguistic skills (phonological awareness and phonemic awareness), as well as knowledge of the alphabet at preschool age demonstrate better reading and writing performance in later school years (Catts et al., 2015; Hjetland et al., 2017; Hjetland et al., 2019; Lyster et al., 2020; NELP, 2008). Experimental studies testing the effects of interventions aimed at developing emergent literacy skills in pre-schoolers have also obtained positive results (Barrera et al., 2019; Ecalle et al., 2015; Gatto & Barrera, 2022; Kruse et al., 2015; NELP, 2008).

As emergent literacy skills begin to develop in the preschool years, this educational level should be considered as a privileged context to stimulate their development. Prepare teachers so that they can improve their practices in early childhood education may be the most effective approach to increasing literacy skills in the long term (Almeida et al., 2018; Powell et al., 2010) such interventions must be started early and made available for a sufficient period of time to bring educational benefits (Hjetland et al., 2019).

Hjetland et al. (2017) conducted a meta-analysis study to examine the relationship between preschool predictor variables related to reading and later reading comprehension skills. The study indicated that code-related skills in preschool, such as phoneme awareness and letter knowledge, are indirectly related to reading comprehension through their influence on word decoding. These coding/decoding-related skills are most important for reading comprehension in beginning readers, but linguistic comprehension gradually takes over as children grow. Such results recommend the urgency of a comprehensive approach to language in preschool children, suggesting that successful instruction for reading comprehension should target a broad set of linguistic skills to be developed from preschool onwards.

These results suggest that emergent literacy skills, widely recognised in the literature as facilitators of learning to read and write, should be worked on more systematically during preschool, aiming at children's development and also to facilitate work in the following school grades. Although the development of these skills begins in the preschool years, they are also enhanced by the explicit and formal teaching that occurs when entering Elementary School (Viana et al., 2014).

According to the National Early Literacy Panel (2008), knowledge of letters is one of the best predictors of literacy showing significant correlations with reading and writing. The essential requirement for learning to read, in alphabetic writing systems, is the acquisition of the alphabetic principle, that is, the understanding and mastery of the relationships between graphemes and phonemes, which depends, in turn, on knowledge of letters (such as recognise and manipulate letters) and phonemic awareness (how to recognise and manipulate the phonemic units of spoken words) (Tunmer & Hoover, 2019). To achieve this, children also need to develop the ability to reflect on speech sounds, particularly phonemes (Ehri et al., 2001; Melby-Lervag et al., 2012).

According to Morais et al., (2013), the construct “phonemic awareness” involves the capabilities of recognition, discrimination, and insightful reflection of the abstract units of speech, the phonemes. The construct of phonological awareness, in turn, is very broad

and covers several skills, such as: analysis of phrases into words, words into syllables, and syllables or words into phonemes, in addition to the recognition and production of rhymes and alliteration (Capovilla & Capovilla, 2000). This perception of the possibility of segmenting the oral language, particularly in phonemes, which are the smallest sound parts of words, is considered to facilitate learning to read and write and, when worked on in preschool, expands the child's metalinguistic knowledge. Some studies suggest that phonological awareness is strongly related to oral language skills in preschool, forming a single dimension of language (Foorman et al., 2015; Storch & Whitehurst, 2002). Therefore, organised and appropriate pedagogical practices are recommended with the aim of developing phonological awareness in the preschool years and, in this way, helping children's school achievement.

Lyster et al., (2020) assessed reading development in a sample of 323 Norwegian children from preschool to grade 9, across an extensive range of language and reading skills, including phonological awareness and morphological awareness. The results of this study demonstrate the powerful influence of early language on later reading and suggest that language intervention programmes, combining phonological, morphological and semantic activities, can help reduce the incidence of reading problems. Preschool language skills also have far-reaching direct and indirect effects on the development of reading comprehension.

Different debates exist about the challenges and policies that seek to improve the quality of early childhood education, as well as evaluating its results. Furthermore, children from economically and socially disadvantaged families find themselves in conditions of inequality for many reasons, as they might not have access to and experience with books and printed materials. These inequalities further reinforce the importance of preschool as an environment where activities with written language can and should be encouraged.

Experimental studies testing the effects of interventions aimed at developing emergent literacy skills in pre-schoolers have also obtained positive results in at least one of the skills assessed (Barrera et al., 2019; Bleses et al. 2017; Dale et al., 2018; Ecalle et al., 2015; Gatto & Barrera, 2022; Kruse et al., 2015; Lennox et al., 2018; NELP, 2008; Thomas et al., 2020). It is important to highlight, however, that in many studies the programmes are applied to small groups of children or in controlled situations and even by teams of researchers, which reduces their ecological validity.

The present study aimed to evaluate the effects of the DECOLE Programme (Viana et al., 2017) on the emerging literacy skills of preschool children, when applied by the teacher herself, in a natural classroom situation. The specific objectives were: to carry out in-service training for a teacher aiming to understand the theoretical principles and the practical application of the DECOLE programme in preschool classes; evaluate the effects of the DECOLE Programme on participants' phonological awareness skills, letter knowledge, vocabulary and oral comprehension (including comparison with a control group).

The DECOLE Programme is an adaptation of the Speaking, Reading and Writing Programme: Integrative Proposals for Kindergarten, developed in Portugal by Viana and

Ribeiro (2014). Both programmes have the general objective of providing educators who work with preschool children a structured set of pedagogical activities aimed at developing emergent literacy skills. Studies conducted to evaluate the effectiveness of the Portuguese Programme (Ribeiro et al., 2014) reveal that it received good acceptance from the teachers involved.

Like the original Portuguese programme, the Decole Programme (Viana et al., 2017) is based on the complete reading of books of children's literature, carried out in a dialogic, shared and participatory way. The teacher reads aloud to the children, with breaks for dialogues, questions and integrative activities, thus providing vocabulary's development and improving the comprehension skills by the text reflections and analysis of the illustrations.

The programme is organised using attractive and appropriate practices for preschool children in exploring oral and written language. The specific objectives of the Decole Programme are: 1) to promote the development of oral language, particularly the expansion of vocabulary and oral expression and comprehension skills; 2) to promote the development of metalinguistic skills (the ability to reflect on language in its phonological, morphological and syntactic aspects); 3) facilitate the acquisition of cultural and conventional knowledge about written language; 4) promote progress in understanding the relationships between oral language and written language; 5) encourage motivation, interest and curiosity for learning to read and write.

The various activities proposed, based on the reading of each book, are organised into five dimensions: reading, exploration of the verbal or bimodal text (drawing), writing, morphosyntactic reflection and phonological awareness. In recent research (Gatto & Barrera, 2022), significant positive results were obtained from the application of the DECOLE Programme on phonological awareness and oral comprehension skills, in a sample of Brazilian pre-schoolers, however the application of the programme, although conducted in a context of classroom, was made by the researcher. Therefore, it is of fundamental importance that the programme is tested for its possibilities of generating a significant impact on the emergent literacy skills of pre-schoolers when applied by the teacher herself in the natural teaching conditions observed in the preschool context, in order to confirm the ecological validity of the results obtained.

Materials and Methods

The present study was conducted with a quasi-experimental design that makes it possible to analyse the immediate effects of an intervention, based on the comparisons of results between the Experimental Group and the Control Group, assessed before and after intervention. The emergent literacy skills assessed were phonological awareness, alphabet knowledge, vocabulary and oral comprehension.

The researcher in charge trained the preschool teachers in the theoretical principles of the DECOLE Programme and its application to the preschool teachers' two classes.

Participants

The sample consisted of 53 Brazilian children, the gender distribution was 29 boys and 24 girls with a mean age of 5 years and 7 months ($SD=3.9$ months). These children were students at a public school chosen by the Municipal Education Department, for reasons of convenience (the director's flexibility in the participation of researchers in the school routine). The school serves children from low to medium socioeconomic levels. Most parents/guardians of the children participating in the research are literate, predominantly having completed high school).

Ethical Procedures

The research project was submitted for evaluation by the Research Ethics Committee of the researchers' institution and was considered approved. The parents or guardians of the participants signed the Free and Informed Consent Form, also considering the children's agreement to voluntarily participate in the research.

Instruments

To assess participants' emergent literacy skills, both before and after the intervention with the DECOLE Programme, the following instruments were used:

Phonological Awareness Test by Oral Production

The Phonological Awareness Test by Oral Production (PCF-O) (Seabra & Capovilla, 2012) is made up of ten subtests, with each subtest made up of two training items and four test items. The PCF-O scores correspond to the frequency of correct answers, and can vary from zero to 40. The skills evaluated by the PCF-O are: 1) Syllabic synthesis (e.g., "put these syllables together /ca/, /ne/, /ta/": /caneta/); 2) Phonemic synthesis (e.g., "put these sounds together /g/ /a/ /t/ /o/": /gato/); 3) Rhyme judgment (e.g., "repeat the words that end with the same sound: /peito/, /rolha/, /bolha/": /rolha/ and /bolha/); 4) Alliteration judgment (e.g., "repeat the words that begin with the same sound: /colar/, /fada/, /coelho/": /colar/ and /coelho/); 5) Syllabic segmentation (e.g., "separate the syllables of /fazenda/": /fa/, /zen/, /da/); 6) Phonemic segmentation (e.g., "separate the sounds of /aço/": /a/, /s/, /o/); 7) Syllabic manipulation (e.g., "add the syllable /bo/ to the beginning of /neca/": /boneca/); 8) Phonemic manipulation (e.g., "add the sound /l/ to the beginning of /ouça/": /louça/); 9) Syllabic transposition (e.g., "repeat the syllables of /boca/" backwards: /cabo/); and 10) Phonemic transposition (e.g., "repeat the sounds of /sala/ backwards": /alas/). In the present study, the subtests related to the analysis and/or manipulation of phonemes (2, 6, 8, 10) were not used. Scores could therefore vary from 0 to 24. The PCF-O has evidence of validity and reliability (Cronbach's alpha of 0.91 in a sample of children from 1st to 4th grade) and standardization data for Brazilian children from 3 to 14 years old (Seabra & Dias, 2012).

Letter Knowledge Survey

This task was developed specifically for this study, by the researchers, with the aim of verifying the child's knowledge of naming the letters of the alphabet or saying their sounds. Each letter, including vowels and consonants, was presented separately, in capital letter format, in black Arial font, size 72, on a white background, on a notebook screen (with the help of the Power Point programme). The order of presentation was randomized, and the same sequence was maintained for all children. The score could vary from 0 to 26 points, considering both the verbalization of names and the sounds of letters correct. It is noteworthy that, as this test was developed specifically for the present study, there are no expected standards for the level of Early Childhood Education.

ABFW Vocabulary Test

The ABFW test (Befi-Lopes et al., 2004) evaluates children's lexical competence by assessing expressive vocabulary. It consists of 118 figures that are separated into nine conceptual fields: animals (15); food (15); means of transport (11); furniture and utensils (24); clothing (10); professions (10); locations (12); shapes and colours (10); toys and musical instruments (11). The child needs to name the figure indicated in each conceptual field. The test can be applied to children aged 2 to 6 years, being standardized for the Brazilian population.

Contrastive Test of Listening and Reading Comprehension – (TCCAL)

The TCCAL (Capovilla & Seabra, 2013) is composed of two subtests: the Spoken Sentence Comprehension Subtest and the Written Sentence Comprehension Subtest. The first subtest, used in the research, assesses receptive vocabulary and oral comprehension, while the second assesses reading comprehension. It has standardization and validation for application in the Brazilian population aged 6 to 11 years.

Teacher training procedures and classroom intervention

For convenience criteria, two classes were designated as the Experimental Group and two classes as the Control Group (this group continued with the school's normal curriculum during the research period). Prior to the start of the Programme application, the initial training for the teacher was provided personally by the researcher at the school, lasting a total of 12 hours, divided into two-hour sessions, twice a week, for three weeks. Theoretical orientations were carried out with the support of slides presented on the computer regarding the basic principles of the Programme, including topics such as language development, metalinguistic skills, and emergent literacy skills in preschool children. Along with these guidelines, the teacher received a book from the DECOLE Programme that describes the entire basis and justification of the characteristics of activities to introduce children to the scope of oral and written language in early childhood education.

The teacher responsible for the Experimental Group applied the DECOLE programme in her two classes, after the training received and under weekly guidance and supervision from the researcher. The intervention included dialogic and shared reading of children's literature books, phonological awareness activities encompassing analysis of rhymes, syllables and alliteration, and vocabulary and oral comprehension tasks. The materials used were children's literature books, images accompanied by their written names, answer cards (YES and NO, 1 and 2), alphabet tree with images and letters, treasure chest, opinion sheet, and fun phonological awareness games. The Programme was applied in 59 intervention sessions (on average 3 sessions per week, lasting approximately 50 minutes each). In relation to phonological awareness training, the intervention focused only on the syllabic level, in which the skills of segmentation, synthesis, identification and production of rhyme and alliteration were worked on. It was not possible to work on phonemic awareness skills in the interventions due to the COVID 19 pandemic, and the mandatory use of masks during the research.

Data analysis

Initially, descriptive analyses were conducted in order to summarise the groups' performance on the different instruments applied at both moments of the research (pre-test and post-test). Analyses to verify the hypothesis of normality in data distribution were also carried out using the Shapiro-Wilk Test. For comparisons between Experimental and Control Group, we used the t Test and the Mann-Whitney test for independent samples. Effect sizes (Cohen's d) were reported and significance levels were previously determined at $p < 0.05$. According to Cohen (1988), values 0.2, 0.5 and 0.8 are considered small, medium and large effects, respectively.

Results

The data were analysed quantitatively, using descriptive and inferential statistical analysis, to compare the performance of the Experimental Group and Control Group. Table 1 presents the maximum and minimum values observed, media, median and standard deviation of the variables investigated in the pre-test and post-test, in each group of participants.

Table 1

Descriptive analysis of the results obtained by participants in the Experimental and Control groups in the Pre and Post-test in the skills assessed

	N	Min.	Max.	Mean	SD	Median
Experimental Group						
Letters' Knowledge_Pre	30	3,00	26,00	12,50	7,64	11,00
Letters' Knowledge_Post	30	7,00	26,00	17,63	6,86	18,50

Phonol. Awarenessl_Pre	30	1,00	17,00	7,00	3,81	6,00
Phonol. Awareness_Post	30	3,00	24,00	13,40	5,28	13,00
Vocabulary_Pre	30	54,00	99,00	82,40	12,41	87,00
Vocabulary_Post	30	60,00	107,00	90,83	11,05	94,00
Oral Comprehension_Pre	30	14,00	33,00	22,43	4,79	22,50
Oral Comprehension_Post	30	17,00	37,00	32,30	3,92	33,00
Control Group						
Letters' Knowledge_Pre	23	1,00	26,00	12,61	8,18	14,00
Letters' Knowledge_Post	23	,00	26,00	16,22	8,58	20,00
Phonol. Awarenessl_Pre	23	,00	17,00	6,00	3,46	5,00
Phonol. Awareness_Post	23	3,00	17,00	7,83	3,50	7,00
Vocabulary_Pre	23	63,00	101,00	84,74	9,81	87,00
Vocabulary_Post	23	62,00	103,00	88,35	11,71	92,00
Oral Comprehension_Pre	23	10,00	35,00	23,39	6,48	24,00
Cral Comprehension_Post	23	16,00	37,00	27,78	5,80	28,00
	N	Min.	Max.	Mean	SD	Median
Experimental Group						
Letters' Knowledge_Pre	30	3,00	26,00	12,50	7,64	11,00
Letters' Knowledge_Post	30	7,00	26,00	17,63	6,86	18,50
Phonol. Awarenessl_Pre	30	1,00	17,00	7,00	3,81	6,00
Phonol. Awareness_Post	30	3,00	24,00	13,40	5,28	13,00
Vocabulary_Pre	30	54,00	99,00	82,40	12,41	87,00
Vocabulary_Post	30	60,00	107,00	90,83	11,05	94,00
Oral Comprehension_Pre	30	14,00	33,00	22,43	4,79	22,50
Oral Comprehension_Post	30	17,00	37,00	32,30	3,92	33,00
Control Group						
Letters' Knowledge_Pre	23	1,00	26,00	12,61	8,18	14,00
Letters' Knowledge_Post	23	,00	26,00	16,22	8,58	20,00
Phonol. Awarenessl_Pre	23	,00	17,00	6,00	3,46	5,00
Phonol. Awareness_Post	23	3,00	17,00	7,83	3,50	7,00

Vocabulary_Pre	23	63,00	101,00	84,74	9,81	87,00
Vocabulary_Post	23	62,00	103,00	88,35	11,71	92,00
Oral Comprehension_Pre	23	10,00	35,00	23,39	6,48	24,00
Oral Comprehension_Post	23	16,00	37,00	27,78	5,80	28,00

Table 2 presents the results of applying the Mann-Whitney Test used to compare the performance of EG and CG participants in the Pre-test. Table 3 presents the results of the comparison between the groups considering the differences in results between the Pre and Post-test, as well as the effect sizes observed in the differences obtained, after the EG had undergone the intervention with the Decole Programme. The use of the Mann-Whitney Test is justified because the results of the Shapiro-Wilk Test rejected the hypothesis of normality for most of the data.

Table 2

Results of the Mann-Whitney Test for comparison between Experimental Group and Control Group in the Pre-Test for the skills assessed

Pre-test	N	U (Mann-Whitney)	p
Letters' Knowledge	53	344,500	0,993
Phonological Awareness	53	291,000	0,328
Vocabulary	53	372,500	0,621
Oral Comprehension	53	389,500	0,423

Table 3

Results of comparisons observed between groups considering the differences between pre-test and post-test performances in the skills assessed

	N		statistics	df	p	Effect´s size (Cohen´s d)
LK (Post – Pre)	53	t de Student	1.66	51.0	0.052	0.459
	53	U de Mann-Whitney	257		0.057	
Vocab. (Post – Pre)	53	t de Student	1.87	51.0	0.033 *	0.519
	53	U de Mann-Whitney	251		0.045 *	
PA (Post -Pre)	53	t de Student	4.19 ^a	51.0	< .001 **	1.162
	53	U de Mann-Whitney	148		< .001 **	
OC (Post-Pre)	53	t de Student	3.64	51.0	< .001 **	1.009
	53	U de Mann-Whitney	169		< .001 **	

OBS: LK = Letters' Knowledge; Vocab = Vocabulary; PA = Phonological Awareness; OC = Oral Comprehension

It is observed, therefore, that, while the groups did not differ significantly in terms of the skills assessed before the intervention, after participating in the Decole Programme, the Experimental Group made significantly greater progress than the Control Group in vocabulary, phonological awareness and oral comprehension skills. The observed effect sizes were large for phonological awareness and oral comprehension ($d > 0.8$) and can be considered moderate for expressive vocabulary and also for the letters' knowledge ($d \sim 0.5$), although in the case of this last variable the difference between the groups was only marginally significant.

Discussion

The present research aimed to investigate the effects of the DECOLE Programme on the emergent literacy skills of kindergartners. The variables focused were vocabulary, oral comprehension, knowledge of the letters and phonological awareness.

The results showed that the intervention was positive, with significant differences being identified in favour of the Experimental Group in phonological awareness,

vocabulary and oral comprehension skills, and marginally significant differences were observed regarding letters' knowledge, suggesting the effectiveness of the programme for the development of these emergent literacy skills.

These results are in line with others found in the literature, such as those obtained in the evaluation of the Talk, Read and Write Programme in Portugal (Ribeiro et al., 2014), as well as in literature surveys on the effect of programmes developed with pre-schoolers aiming to promote the development of skills considered precursors to reading and writing (Barrera et al., 2019). The systematic literature review in the Scielo database developed by Barrera and collaborators (2019) indicates that the effect of interventions carried out with pre-schoolers aimed at developing phonological awareness and oral language, through dialogical reading of stories, focusing on both linguistic and code-related skills, are more successful in developing these skills. These results also add to evidence and even expand those presented in the study conducted by Gatto and Barrera (2022), suggesting the effectiveness of the Decole programme for the development of vocabulary and letters knowledge, beyond the positive effects already found in that study, concerning phonological awareness and oral comprehension.

The emergent literacy skills studied are important precursor abilities of reading and writing and support the initial acquisition of literacy (NELP, 2008; Whitehurst & Lonigan, 2003; Viana & Ribeiro, 2014). Promoting these fundamental skills in kindergartners should therefore lead to a better response to formal literacy instruction. Studies on phonological awareness indicate that the ability to detect, identify and manipulate the sound structure of language, in addition to being one of the strongest predictors of later success in reading (Ehri et al., 2001), is strictly related to reading difficulties (Melby-Lervåg et al., 2012).

Regarding vocabulary and oral comprehension skills, the results indicate a significant effect of the programme on fundamental linguistic skills for the development of reading comprehension, as pointed out by Gough and Tunmer (1986). Furthermore, knowledge of the meaning of words (vocabulary) helps children reflect on their phonological representations. Despite its recognised importance, opportunities for children to develop oral language skills may be limited in preschool (Snow et al., 1998).

Developing letters' knowledge is not a specific objective of the Decole Programme, but it can be sought as an important emergent literacy skill to be developed in preschool (NELP, 2008; Piasta, 2014; Rohde, 2015). The programme itself does not have this objective, but it can be adapted to work on this skill in a more systematic way. Even so, the results suggest a moderate effect of the intervention carried out with the Decole Programme. In fact, the activities with the "Tree of words" were planned to work with the letters of the alphabet and may have contributed to the effects obtained.

The results indicate the effectiveness of the Decole Programme, when applied in a natural classroom situation and by a properly trained and prepared teacher, for the development of emergent literacy skills, thus contributing to the scientific evidence of the use of theoretically based teaching methodologies. It is possible to attribute such effects to the structure of the Decole Programme, which is based on the dialogical reading of children's books with systematic activities involving questions related to oral

comprehension, prepared for the reading of each story. In fact, several studies have indicated the potential of shared and dialogic reading for the development of oral language (Barrera et al., 2019; Lyster et al., 2020; Shanagan & Lonigan, 2010; Viana & Ribeiro, 2014).

A limitation of the study is that the fidelity of the teacher's implementation of the programme was not examined. The results and the researcher's supervision indicate that the teacher followed the activities proposed by the programme. However, it would be important to know more about the teacher's ability to carry out interventions with a high degree of implementation fidelity.

Conclusion

The results obtained have implications for the professional development of preschool teachers and may improve the quality of early childhood education, contributing to ensure that emergent literacy skills are developed more effectively. The acceptability of the intervention by the teacher and the children was also an important effect of the intervention. The teacher considered the activities of the DECOLE Programme appropriate for the students' linguistic development and motivation and particularly appreciated their approach. The present study demonstrates that it is possible for preschool students to receive intervention in emergent literacy skills based on playful activities, with intentionality and systematisation for the learning context. The intervention was conducted in a natural environment, which is a strong point in terms of external validity. Research with educational programmes in a natural classroom situation is not common, since most of the studies found were conducted in small groups.

The results obtained so far suggest that the use of the Decole Programme in preschool classes can contribute to the development of fundamental skills and knowledge for the initial learning of reading and writing. Future research would be important to identify specific programme elements that could be particularly useful in promoting improvements in emergent literacy skills, as well as to determine the quality assurance mechanisms needed to ensure that intervention benefits remain replicable. Longitudinal studies aiming identifying the effects of participation in the programme on reading and writing skills in the first and second grade of elementary school would also be desirable.

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**EFFICACY OF A METACOGNITIVE INTERVENTION
PROGRAMME ON READING COMPREHENSION IN
THIRD GRADE STUDENTS**

**EFICÁCIA DO PROGRAMA METACOGNITIVO DE INTERVENÇÃO
NA COMPREENSÃO DE LEITURA EM ESTUDANTES DO TERCEIRO
ANO**

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Abstract

This study examined the efficacy of a metacognitive intervention programme in a classroom group of 33 third-grade students. Two groups were formed: the intervention group with students in the classroom who showed reading delay and cognitive attention processes (n=8) and the comparison group (n=25). In the intervention group, a planning facilitation programme was implemented that aimed to improve inhibition processes and, correspondingly, overall reading comprehension indices. The Das-Naglieri: Cognitive Assessment System (D.N: CAS; Naglieri & Das, 1997) was used to measure attention processes. For reading processes, the Catalan et al. (2010) Reading Comprehension Assessment (ACL) test was used. The measurements were taken at pre-test, post-test, and follow-up. The results showed that the intervention group equalled the comparison group in reading comprehension and significantly improved in inhibition processes in the post and follow-up measures. It is concluded that the programme has had an impact on improving inhibition processes when facing reading activities.

Keywords: Inhibition, reading comprehension, metacognitive processes, planning facilitation, quasi-experimental study

Resumo

Este estudo analisou a eficácia do programa de intervenção metacognitiva numa turma de 33 alunos do terceiro ano. Foram formados dois grupos: o grupo de intervenção, com estudantes na sala de aula que demonstraram um atraso na leitura e nos processos de atenção cognitiva (n=8), e o grupo de comparação (n=25). No grupo de intervenção, um programa facilitador do planeamento foi implementado, visando melhorar os processos de inibição e, correspondentemente, os índices de leitura e compreensão de um modo geral. O Das-Naglieri: *Cognitive Assessment System* (D.N: CAS; Naglieri & Das, 1997) foi utilizado para medir os processos de atenção. Para os processos de leitura, o teste de *Reading Comprehension Assessment* (ACL) de Catalan et al. (2010) foi utilizado. As análises foram consideradas no pré-teste, pós-teste e *follow-up*. Os resultados demonstraram que a intervenção de grupo igualou o grupo de comparação na compreensão da leitura e melhorou significativamente nos processos de inibição nas análises do pós-teste e do acompanhamento. Conclui-se que o programa teve impacto na melhoria dos processos de inibição quando consideradas as atividades de leitura.

Palavras-chave: Inibição, compreensão de leitura, processos metacognitivos, facilitação de planificação, estudo quase experimental

Introduction

Reading requires the use of complex thinking skills (inference, comprehension, reasoning). The integration of these skills activates the executive functions of cognitive flexibility, inhibition, and working memory updating.

Working memory is the ability to maintain information active for a short period of time, without the stimulus being present, to perform an action or solve problems using information actively, as well as for the development of thinking processes (Baddeley, 2003).

Cognitive flexibility (Shifting) is the ability to change an action or thought scheme in relation to what the evaluation of its results indicates is not efficient, or to changes in the conditions of the environment and/or the conditions in which a specific task is carried out. It also involves the generation and selection of new work strategies within the multiple options available to develop a task (Miller & Cohen, 2001).

Inhibition or inhibitory control is the ability of the human being to inhibit or control impulsive (or automatic) responses and generate responses mediated by attention and reasoning. It allows the suppression of stimuli that compete when a particular task is performed. This would involve suppressing external stimuli that can hinder cognitive functioning, eliminating internal stimuli that can interfere with the operations that take

place in working memory, or avoiding prepotent or automatic responses that are irrelevant to the achievement of the primary task (Diamond, 2013).

Inhibition is one of the main processes of cognitive regulation as it carries out the active control of cognitive contents. This assigns it a key role in reading comprehension (Hasher, et al., 2007; Bizama, Gatica, Aqueveque, Arancibia & Sáez, 2020).

According to Baddeley (2003), when there is an inhibitory deficit, in addition to generating impulsive, hyperactive, and disorganised behaviour, alterations in executive functions occur. This happens because inhibition creates a pause (a fraction of a second) between the stimulus and the response, so that the other executive functions can enter the scene. In that interval, the executive functions help us to analyse the possible consequences of an action and, based on this, we plan and organise ourselves, in order to achieve the set goal. If that pause does not exist, the other executive functions cannot intervene.

Inhibition and attention are two closely related cognitive processes. Attention is the ability to focus the mind on a specific stimulus or task, while inhibition is the ability to suppress irrelevant or inappropriate responses or thoughts. Attention can be sustained or selective. Sustained attention is the ability to maintain attention on a task for a prolonged period of time. Selective attention refers to the child's ability to focus their attention on a relevant stimulus while ignoring irrelevant stimuli. (Rebollo & Montiel, 2006).

The variables of analysis that will be taken into account in this study are inhibition measured through selective attention tests and reading comprehension.

Inhibition and Reading Comprehension

Inhibition seems to have an important influence on reading comprehension tasks (Bizama-Muñoz, et al., 2020). During reading, more information is activated than is necessary for understanding a text, information that can produce interference; suppression is the mechanism responsible for eliminating these interferences (Gernsbacher & Faust, 1991). Good comprehenders would suppress or inhibit inappropriate information better during text processing. According to Cain (2006), poor comprehenders are less skilled at inhibiting or suppressing irrelevant information for the task. The sensitivity to interference of poor comprehenders has been reported in several studies. For example, children with reading difficulties show greater susceptibility to interference on the Stroop test (Kelly, Best & Kirk, 1989). In Cain's (2006) study, good and poor comprehenders were compared using a negative priming sentence processing task adapted from Lorsch et al., (1996) to determine if good and poor comprehenders differed in their ability to inhibit words that had been generated in a previous task and that were no longer relevant to the task. The results indicated that poor comprehenders were less able to erase information from their working memory that was no longer relevant to the task.

Thus, there are children with problems in the comprehension of texts who do not show deterioration in their decoding skills, but who have specific problems in various skills related to comprehension (Nation & Snowling, 1997). These children show failures

in a wide range of cognitive processes, including deficits in their vocabulary and other higher linguistic skills, such as monitoring (Oakhill, et al., 2005), inference making (Cain & Oakhill, 1999; Cain, et. al, 2004; Savage, 2006, Nation, 2005), working memory (Butterfuss & Kendeou, 2018) and inhibition (Cain, 2006; Georgius & Das, 2016).

Cain's (2006) study examined the relationship between inhibition and reading comprehension in children aged 8 to 10 years. The study tasks of inhibition such as the Stroop task, in which participants had to name the colour of the ink in which a word was written, ignoring the meaning of the word. Reading comprehension tasks included reading texts and answering questions about the texts. The results of the study showed that children with better inhibition skills had better reading comprehension skills. Children who could inhibit their automatic responses were more able to understand the meaning of a text, even when the text was ambiguous or complex. The findings of the study suggest that inhibition is an important skill for reading comprehension. Children with inhibition difficulties may have difficulty understanding the meaning of a text, even if they have a good vocabulary and knowledge.

Inhibition requires automatic and controlled processes produced at the behavioural or cognitive level (for example, Friedman and Miyake, 2004; Nigg, 2000). An individual with weak cognitive inhibitory skills may retain irrelevant information in working memory and not allow relevant information to be acquired because the system is overloaded. In this way, weak inhibitory skills can affect text comprehension.

Studies such as those of Barnes, Faulkner, Wilkinson & Dennis, (2004) and Georgius and Das (2016) show that adults and children with poor reading comprehension have deficient inhibitory mechanisms by being slower to suppress irrelevant meanings of ambiguous words.

In memory tasks, Palladino, et al., (2001) showed that adults with weak reading comprehension are more likely to remember words from previous essays that should have been forgotten than good comprehends. In children, they observed that when they present poor reading comprehension, they similarly experience a greater number of intrusions in their memory of memory tasks and are also more likely than good comprehends to remember irrelevant content. These findings indicate that poor comprehends may suffer from weak inhibitory processes that negatively affect their working memory capacity.

Comprehension is an active process of integrating information. In which, in order to fulfil the objective of creating a coherent mental representation of the text, the reader must hold certain information in the MT while computing the relationships between words and sentences, at the same time, he must be able to inhibit irrelevant information and update the relevant information in his working memory (Cain, 2006).

Metacognitive Strategies and Reading

Metacognitive strategies such as planning, monitoring, or reviewing have been shown to be effective for reading comprehension. Studies such as those by Baker and

Brown (2001) found benefits when using these metacognitive strategies with elementary and secondary students. In another study, Pressley and Harris (2002) examined the effectiveness of a metacognitive strategy-based intervention programme to improve reading comprehension in fourth-grade students with reading difficulties. The intervention group was taught metacognitive strategies of monitoring and guided instruction. The results indicated that the intervention programme was effective in improving reading comprehension in students with difficulties.

Study Aims

This study aims to find significant effects on inhibitory processes and reading comprehension in the intervention group after the application of the planning facilitation programme. It is expected that the intervention group will significantly improve their scores in inhibitory processes measured through the DN attention scale: CAS (Naglieri & Das, 1997), and reading comprehension measured through the ACL scale (Català, et al., 2010).

Research Questions

Do planning facilitation strategies help to improve inhibitory processes in students with reading difficulties? Does the improvement of inhibitory processes directly influence the improvement of reading comprehension?

Method

Participants

The sample consisted of 33 students in a 3rd grade primary education classroom in the city of Ourense, Spain. The socioeconomic status of the families in the area is of a medium level. The types of economic activities developed in the surrounding area belong to the tertiary sector (Instituto Galego de Estatística; IGE, 2018). By gender, 14 were girls and 19 were boys. Their age ranged from 7.5 to 8.4 years, with an average age of 8.05 years.

The classroom group was divided into two. The criteria used for the division of the classroom group were of two types: one the reading delay that some students were acquiring in the judgment of the classroom teacher. Two, the confirmation of the delay in the results obtained in standardised reading tests. The groups formed were different in number. The group with reading difficulties (n=8) and the group of typical development (n=25). This group of typical development formed the comparison group, and the intervention was carried out with the group of difficulties in reading comprehension.

Both groups were equalised in the socioeconomic and cultural level of the parents. They were students of urban origin and from families of medium socioeconomic level. No significant differences were found by gender and group ($\chi^2(1)=.454$; $p=.501$). The sample had homogeneous characteristics in terms of social, economic, and cultural variables.

Instruments

Cognitive Processes. To measure cognitive processes, the Das-Naglieri Cognitive Assessment System (D.N: CAS; Naglieri & Das, 1997) was used in its Spanish adaptation (Deaño, 2005). This battery is composed of four scales: Planning, Attention, Simultaneous, and Successive. In the scales corresponding to 7-9 years old, the minimum score that a student can obtain is 30 and the maximum score is 120. The Attention Scale, corresponding to sustained attention, was used.

Attention Seale. The sub tests comprising the Attention Seale demand that the child resist distraction and maintain appropriately directed attention to the completion of specific tasks. This scale comprises three subtests: (i) For the Expressive Attention subtest, the child must read colour words orally, identify the colour of a series of rectangles, and name the colour of the ink in which words are printed. The distractor is the difference between the word and the colour of the ink (e.g., RED printed in green ink). (ii) Number Detection consists of pages of numbers that are printed in various fonts (e.g., outline). Children are given a stimulus (e.g., 1, 2, and 3 in a normal font) and are required to find all numbers that match the number as well as the font. (iii) Receptive Attention involves underlining pairs of matching letters in multiple rows of stimuli. The first item requires that the letters match physical appearances (e.g., R, R), while the subsequent item demands that they have the same name (e.g., r, R).

Reading Processes. The Avaluación de la Comprensión Lectora (ACL) test by Català, et al., (2010) was used to measure reading processes. The ACL consists of 6 tests, corresponding to each of the six grades of primary education. The tests are designed to assess reading comprehension in a broad manner, with texts of different types (narrative, expository, poetic, interpretation of a graph, and interpretation of data), and with topics related to the different curricular subjects. These tests collect information on four relevant dimensions of reading comprehension: literal, which focuses on the ideas and information that are explicitly stated in the text; reorganising, where the student must analyse, synthesise, and/or organise the explicitly expressed ideas in the text; inferential, which is executed when the student is able to use both the information explicitly stated in the text and the prior knowledge they possess to formulate conjectures and hypotheses; and critical, in which the student must provide answers that indicate that they have made a value judgment, comparing the ideas presented in the text with an internal (personal) or external criterion (the teacher, other sources, etc.). ACL scores range from 0 (minimum) to 10 (maximum). The reliabilities of the test for each one of the levels established from 1st to 6th grade, by means of the KR-20, were, respectively, .80, .83, .80, .83, .82, and .76.

Procedure

Assessment Procedure

Each student was given instructions on what was going to be done before starting the individual administration of the D.N: CAS Battery. The administration was carried out in accordance with the administration and recording guidelines in the manual. The duration was approximately 30 minutes per participant. The evaluator was trained in the administration of this battery. The same evaluator was used for all participants. The test was administered in a suitable room in the school itself and in a relaxed atmosphere. The ACL test was administered collectively and in accordance with the application and recording guidelines. The approximate duration of the test was 30 minutes. The tests were conducted in sessions and on different days in the order described. The necessary permissions were obtained for their implementation, and the collaboration of the teaching staff was sought for their collective and individual administration.

Intervention Programme

The programme consists of texts for reading, of different levels, extracted from the ACL. These texts were used to answer questions asked of the students about each of the texts at a given level. The levels of the texts used for this programme were ACL-1, ACL-2; ACL-4 and ACL-5. The ACL-3 was not used for the intervention as it was used for the evaluation. The programme consists of eight to ten texts per level. Each text has five questions. The level at which the programme for 3rd grade students began was ACL-2, followed by ACL-1, ACL-4 and finally ACL-5. The different levels are used in the intervention so that students can start with texts of less difficulty, which would allow them to acquire the strategies better and then integrate them through more complex texts.

The intervention had the consent of the school administration, the students' parents, and the university research team. It was conducted in a small group system. Each group consisted of 4 participants. The tasks of the text reading programme were implemented using the Planning Facilitation method of Naglieri & Gottling (1997) and the expansion made by Haddad et al. (2003) for reading, which consists of three moments.

Moment 1. The teacher gives the students an ACL text with the five questions to which they have to answer, in ten minutes, individually, after reading it. In this time, the student has to put into place strategies for selecting information, remembering, and organising. To carry out these strategies, the student must reinforce working memory, planning, and inhibition.

Moment 2. With the questions answered by the students in sight, the mediator initiates a debate by asking reflection questions. The mediator does not exhaust the repertoire of questions, but uses them to guide the debate. After ten minutes, the discussion is terminated. At this point, the student puts into place metacognitive processes, through which they will analyse how their classmates have completed the

tasks, evaluate whether their strategies have worked correctly, and plan a new way of working.

Moment 3. The mediator collects the completed sheets from all the students and gives them others with the same text and the same questions to solve the task for ten minutes. In this last moment, they will work on the same strategies as at the beginning, but this time their inhibition processes will have better working strategies, thanks to what they have learned in the previous phase.

The time for completing a text was one session of half an hour, twice a week per group. The number of texts used was 24, which, implemented at 2 sessions per week, makes a total of 12 weeks of intervention, for each group. The total number of intervention sessions was 48 throughout the second school quarter.

The participants in the programme left the classroom to work with the mediator for each session. The exit from the classroom had been scheduled in advance.

Comparison Group

The comparison group learned to read in a conventional way. They read a text with conceptual notions about language, grammar, syntax, and spelling and resolved conceptual questions raised in the text.

Design and Data Analysis

A pre/intervention/post/follow-up design was used, contrasting the intervention and comparison groups on each measure. To evaluate the effectiveness of the training programme in 3rd grade students, a repeated measures multivariate analysis of variance (MANOVA) was conducted for attentional processing (D.N.: CAS) and reading comprehension (ACL).

The Greenhouse-Geisser correction was used for the degrees of freedom, given the violation of the sphericity assumption. The analyses were conducted with the Statistical Package Social Science (SPSS) software package, version 18.0.

Results

The intervention and comparison groups were significantly different on the cognitive variable of attention and its subtests, with the comparison group having a higher mean score than the intervention group [$F(2,62)= 25.286, p=.001$]. The groups also differed initially in their reading comprehension scores [$F(1, 29)= 9.501, p=.005$], with the comparison group having a significantly higher mean score than the intervention group.

Table 1

Cognitive processes (Attention, Scale; D.N.: CAS)

	GE n= 8			GC n= 25			Group x measure N= 33		
	M1	M2	M3	M1	M2	M3	F (gl.)	p	$\eta^2_{\text{parcial}}^1$
	M (DT)	M (DT)	M (DT)	M (DT)	M (DT)	M (DT)			
Atención	91.00 (11.43)	106.62 (14.22)	109.77 (13.33)	105.60 (12.81)	104.13 (12.61)	105.01 (10.92)	31.077 (2,62)	.000***	.501

Note: *p < .05; **p < .01; ***p < .001

Note: 1 Small effect size: .01, Medium effect size: .06, Large effect size: .14 (Cohen, 1988)

The results of the analysis of variance for attention cognitive processes, measured with the CAS, showed a main effect for attention processes, $F(2, 62) = 25.286$, $p < .001$, $\eta^2_{\text{parcial}} = .449$.

These main effects indicated that the mean scores of the participants in attention cognitive processes varied significantly when comparing the pairs M1-M3 ($p < .05$). That significant variation of mean scores, in terms of effect size expressed through the value obtained from partial eta squared, was large.

A significant interaction Group x Measure also occurred, indicating that the mean scores of the intervention and comparison groups in attention cognitive processes varied more than what would be attributable to chance in the three measures (Table 1). The effect sizes associated with each interaction were large.

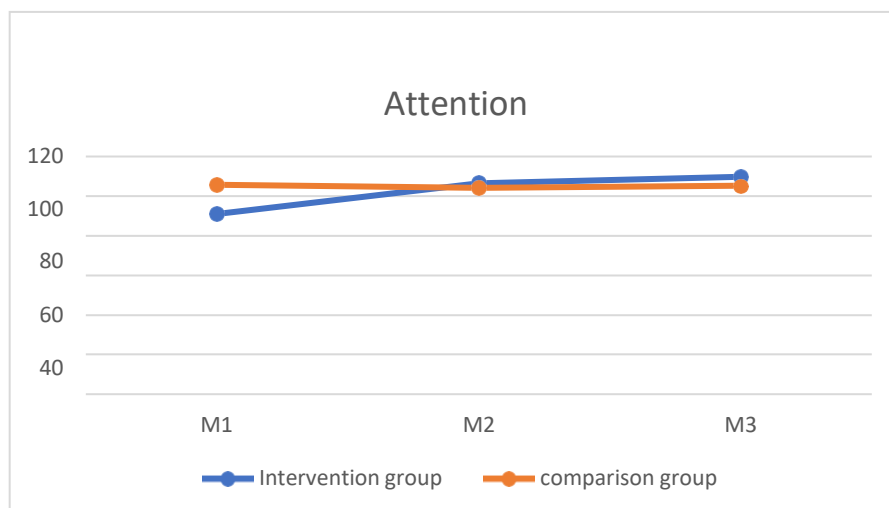


Figure 1. Average scores in cognitive processes for the groups according to the measure

The results of the analysis of variance for reading comprehension, measured with the ACL, showed a main effect for the measure, $F(2, 62) = 60.081$, $p < .001$, $\eta^2_{\text{parcial}} = .660$. This main effect indicates large significant variations in the mean scores of the participants from M1 to M3 ($p < .05$) (Figure 1).

The significant interaction of large size Group x Measure also occurred for reading comprehension.

Table 2
Reading comprehension (ACL)

	GI n= 8			GC n= 25			Group x measure N= 33		
	M1	M2	M3	M1	M2	M3	F (gl.)	p	$\eta^2_{\text{parcial}}^1$
	M	M	M	M	M	M			
	(DT)	(DT)	(DT)	(DT)	(DT)	(DT)			
ACL	3.20 (1.19)	4.95 (.74)	5.87 (1.10)	5.55 (1.97)	6.22 (1.77)	6.31 (1.70)	17.801 (2,62)	.000***	.365

Note: *** $p < .001$

Note: 1 Small effect size: .01, Medium effect size: .06, Large effect size: .14 (Cohen, 1988)

As shown in Table 2, the intervention group participants had significantly lower mean reading comprehension scores than the comparison group participants at the pre-intervention measure (M1), $F(1, 31) = 10.045$, $p < .01$, $\eta^2_{\text{parcial}} = .245$. However, there were no significant differences between the groups at the post-intervention (M2) or follow-up (M3) measures.

Specifically, the intervention group participants had a mean reading comprehension score of 80.0 at M1, compared to a mean score of 90.0 for the comparison group. The intervention group participants' score increased to 90.0 at M2 and remained at 90.0 at M3. The comparison group participants' score remained at 90.0 at M2 and M3.

These results suggest that the intervention programme was effective in improving reading comprehension in third-grade students, as the intervention group participants' scores were significantly lower at M1 than the comparison group participants' scores, but they were no longer significantly different at M2 or M3.

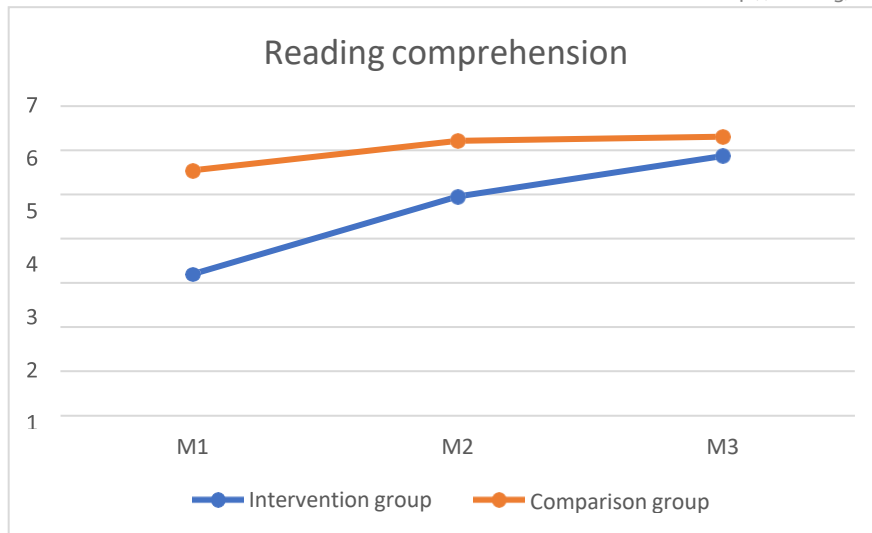


Figure 2. Average scores in reading comprehension for the groups according to the measure

Discussion

The objective of the study was to find a significant effect on the variables of inhibition and reading comprehension in the intervention group compared to the control group. This objective was successfully met.

The intervention produced, as expected, a statistically significant improvement in the scores of the cognitive processes of inhibition, so that the cognitive functioning of the intervention group equalled that of the comparison group, in the processes that differed from the comparison group. The scores of the cognitive processes varied significantly from the pre-intervention mean to the follow-up post-intervention with a large effect size and this variation occurred as a result of the intervention to which the group was subjected and which was reflected in the group x moment of the measure interaction. The analysis of variance showed significant differences for the intervention group in inhibition. This indicates the significant gain in mean score that occurred for the intervention group in the aforementioned processes from the pre-test measure to the follow-up, which, however, did not occur for the comparison group. The group that received the intervention improved its inhibitory measures from pre-intervention to post and to follow-up, producing an interactive effect. Initially, the children/girls in the comparison group had higher mean scores in this process than those in the intervention group, in the post measure and in the follow-up, both groups equalled in the performance of the attention process tasks.

As a result of the intervention, reading performance scores increased from pre-intervention to post-intervention and to follow-up, with reading comprehension performance scores equalizing in the two groups. The significant large variations in the mean scores of the participants were shown from the pre-measure to the follow-up in the intervention group, as indicated by the Group x measure interaction effect for reading comprehension. Initially, the intervention group participants had lower reading

comprehension performance than those in the comparison group, but after the intervention they equalled in reading performance, maintaining similar mean scores in the post measure and in the follow-up (follow-up) measure. Intra-group comparisons made on the three reading comprehension measures indicated statistically significant differences in the mean scores of the intervention group from pre to post and from pre to follow-up, but did not indicate differences in the scores of the comparison group.

As considered by researchers on Planning Facilitation, it promotes reading improvement (Haddad et al., 2003), but at the same time the results of the present study show that it also improves other cognitive processes such as sustained attention. Following research such as Butterfuss and Kendeou (2018) and Georgiou and Das (2016), the improvement in executive attention functions has a significant effect on reading comprehension processes.

The results obtained expand those of Haddad et al. (2003) and Bizama-Muñoz, et al., (2020) in the sense that grade 3 is a good time to address incipient learning difficulties in reading that have not manifested themselves in previous grades, derived from a weakened attentional processing. Its manifestation in grade 3 seems to be presented by the new academic demands (complex reading comprehension) and the participation of complex cognitive skills (thinking, reasoning, inference, comprehension) that require more attentional activity.

To the question "Do planning facilitation strategies help improve inhibitory processes in students with reading comprehension difficulties? Does the improvement of inhibitory processes directly influence the improvement of reading comprehension?" The strategies used in the intervention programme allow to improve inhibitory processes and at the same time improve reading comprehension.

In Cain's (2006) studies, it was shown that there is a relationship between inhibition and reading comprehension. When inhibition skills improve, reading comprehension skills also improve. This relationship is centred on the fact that when students were able to inhibit automatic responses, they could understand better. In this programme, mediated learning with metacognitive questions and the performance of the task at two different times allowed students to create their own strategies to acquire new and more effective skills for reading comprehension. The programme provided students with strategies that they could use long after the intervention. This is demonstrated in the follow-up results where inhibition and reading comprehension improve significantly compared to the post-test results. This study adds to those conducted by Cain (2006) and Georgius and Das, (2016) that a programme of intervention with metacognitive strategies is applied and that this intervention is carried out with students with reading difficulties with the aim of equalizing it with the control group that from the start did not present any difficulty. This study shows that students with reading difficulties can reach the level of their classmates if we improve their inhibitory processes through metacognitive strategies and mediated learning.

This study presents limitations that should be resolved in future research. It is a study with an intentional sample to address a specific situation in a classroom with students at risk of learning difficulty and in which metacognitive instruction was provided

to the subjects who needed an educational response. This has led to a second limitation, which is the number, balance, and assignment of participants to the groups.

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**SAIL AWAY, SAVE A WHALE: OCEAN AWARENESS IN
CHILDREN'S BOOKS AND PICTURE BOOKS**

**NAVEGUE, SALVE UMA BALEIA: SENSIBILIZAÇÃO PARA OS
OCEANOS EM LIVROS ILUSTRADOS E LIVROS-ÁLBUM PARA
CRIANÇAS**

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Abstract

This article discusses two children's books, *The Whale Watchers* (2022), written by Dougie Poynter and illustrated by Amberin Huq, and *Calling the Whales* (2023), written by Jasbinder Bilan and illustrated by Skylar White, as well as one picture book, *The Tale of the Whale* (2022), written by Karen Swann and illustrated by Padmacandra. Highlighting the relationship between children and whales, the article draws upon ecocriticism and ecology in the context of children's literature. Arguing that these narratives present both species as climate activists, the article also explores the significance of the text, not only for the purpose of exposing environmental issues, but by also contributing to environmental literacy and pedagogy. This article aims to conclude that whales' representation throughout the narratives bestows ocean awareness, leading the children to experience and engage with the sea.

Keywords: children's literature, environmentalism, whales, ocean awareness, activism

Resumo

Este artigo analisa dois livros infantis, *The Whale Watchers* (2022), escrito por Dougie Poynter e ilustrado por Amberin Huq, e *Calling the Whales* (2023), escrito por Jasbinder Bilan e ilustrado por Skylar White, bem como um livro-álbum, *The Tale of the Whale* (2022), escrito por Karen Swann e ilustrado por Padmacandra. A destacar a relação entre as crianças e as baleias, o artigo recorre à ecocrítica e à ecologia no contexto da literatura infantil. Com o argumento de que estas narrativas apresentam ambas as espécies como activistas do clima, o artigo explora também o significado do texto, não

apenas com o objetivo de expor questões ambientais, mas também contribuindo para a literacia e pedagogia ambientais. Este artigo pretende concluir que a representação das baleias ao longo das narrativas promove uma consciencialização do oceano, levando as crianças a experimentar e a envolverem-se com o mar.

Palavras-chave: literatura infantil, ambientalismo, baleias, sensibilização para os oceanos, ativismo

Introduction

In recent decades, humanities have been increasingly interested in sciences and environmental studies by engaging and exploring the planet we inhabit, as well as the relationship between humanity and nature (Adamson, 2016; Oppermann, 2016; Siperstein, 2016; Emmett, 2017; Heise, 2017). Moreover, humanities have also started to acknowledge the oceans, in all probability encouraged by recent developments on marine biology and oceanography sciences, as well as because of the environmental damage (Dobrin, 2021; Mentz, 2023; Oppermann, 2023). Consider just a few of the issues the ocean has been witnessing: sea-level rises, threatening coastal communities; pollution, toxic waste and detritus caused by ships and cruises; deep-sea mining and the problematic creation of artificial islands. The collective oceanic awareness is imperative now more than ever. However, as stated by Mike Brown and Kimberley Peters, there seems to be “a gap in this literature concerning the ways in which we engage with seas and oceans with a will to inspire action and evoke change” (2019, p. 2).

Children's literature has always been populated with animals, particularly speaking animals, leading David Rudd to comment “the association of animal and child in children's books is so common that it is easy to forget the figurative nature of this alliance” (2009, p. 242). Anthropomorphic animal stories have, thus, always been popular amongst publishing houses. Non-surprisingly, whales are one of the most favoured and sought out animal characters in children's books, alongside dogs, cats, and bears. In spite of this, not much attention has been devoted to the representation of the biggest mammal on the planet in children's novels, apart from Sinead Moriarty's research on whaling in children's literature, *Antarctica in British Children's Literature*, published recently by Routledge. This article aims at highlighting the importance of this mammal's presence in children's books and picture books, arguing the whale's power of engaging young kids to interact and protect the oceans.

Children's Literature, Environment and Ecocriticism

The foundational contributions for the field of ecocriticism have been provided by the Association for the Study of Literature and Environment in 1992, shortly followed by the journal *ISLE: Interdisciplinary Studies in Literature and Environment* (1993). Further fundamental works include an anthology entitled *The Ecocriticism Reader: Landmarks in*

Literary Ecology (1996), edited by Cheryl Glotfelty and Harold Fromm, which addressed the lack of commitment by the literary studies on the matters of the environmental crisis. Succinctly, Glotfelty and Fromm establish ecocriticism to be “the study of relationship between literature and the physical environment” (1996, p. xviii). Therefore, ecocritics accept that human existence and literature are, undoubtedly, associated with nature and as a theoretical scope “[ecocriticism] negotiates between the human and nonhuman” (Glotfelty and Fromm, 1996, p. xviii). On a more recent note, introductory works, such as Grey Garrard's *Ecocriticism* (2011) and Ken Hiltner's *Ecocriticism: The Essential Reader* (2015) have broadened the extent of ecocriticism analysis.

On the other hand, ecocritics have brought attention to children's novels and picture books, alluding to how environmental concerns could be detected as far back as children's literature from the eighteenth century (Sigler, p. 148). Just as ecocriticism has grasped the potential of narrative and visual literacy for educating younger audiences, the academy has witnessed a proliferation of publications. Firstly, the publication of an issue of *The Lion and the Unicorn* dedicated to ecology in children's texts, “Green Worlds: Nature and Ecology” (1995), as well as another issue published by *Children's Literature Association Quarterly*, named “Ecology and the Child” (1994-95). Secondly, an additional ground-breaking title would be *Wild Things: Children's Culture and Ecocriticism* (2004) by Sidney I. Dobrin and Kenneth B. Kidd. This last publication has given rise to a new branch of ecocriticism in the context of children's texts, which delved into the relationship between children and animals: Zoe Jacques's *Children's Literature and the Posthuman: Animal, Environment, Cyborg* (2015), Anna Feuerstein and Carmen Nolte-Odhiambo's *Childhood and Pethood in Literature and Culture: New Perspectives on Childhood Studies and Animal Studies* (2017), and Christopher Kelen and Chengcheng You's *Poetics and Ethics of Anthropomorphism: Children, Animals, and Poetry* (2022), to name a few. Thirdly, Nina Goga et al. volume on ecocritical analysis, concerning children's texts, YA novels and picture books (2018). Thus, the study investigates the correlation between children's literature criticism and current environmental challenges, albeit solely across Nordic texts. In addition, this volume is structured around five distinct themes: ethic and aesthetics, landscape, vegetal, animal, and lastly, human. Coming from a posthumanism perspective, these works dialogue with the boundaries between human and non-human, debating on the influence of both anthropocentric anxieties and ecocentric viewpoints manifested in the texts. Yet, there continues to be a shortage of research in regards to the representation of oceans and sea animals through the lens of literary studies.

Oceans and Children

Although our planet is an oceanic one, given the fact that 71% of the Earth's surface is covered with water, oceans have been significantly neglected in humanities over the last decades. The paradigm is, however, positively shifting, mostly due to Sidney I. Dobrin's research published under the title *Blue Ecocriticism and the Oceanic Imperative* (2021). The author dwells on the idea that human inhabitants perceive the ocean as a mere place, a territory, which is seemingly unoccupied. The understanding of aqua

nullius, reminiscent of terra nullius, is largely influenced not only by an anthropomorphic view of the world (Dobrin, 2021, 2), but also by colonial and postcolonial times (e.g., cartography). Shifting the discussion from earth/soil/land themes to ocean, Dobrin establishes the concept of blue ecocriticism. Notwithstanding "blue", ecocriticism also deals with oceanic issues, but with minimal regard. As such, Dobrin contends that:

Blue ecocriticism is at once an attempt to emphasize the significantly overlooked importance of ocean in ecocritical work and to call to question the critical function of doing so. Simultaneously, blue ecocriticism strives to consider the ramifications of those representations of ocean upon and within cultural imaginaries and to provide what might be thought of as an oceanic fluency (2021, p. 8).

Overall, blue ecocriticism advocates ocean awareness. On one hand, it encourages a recognition of the ocean and its implications toward human culture and on the other, it dives into the gaps of ecocriticism as a field. Furthermore, Steve Mentz's most recent textbook, *An Introduction to Blue Humanities* (2023), fills the gap between environmental humanities and oceanic literature, encompassing ocean-centric approaches to various classical literary texts. Correspondingly, Oppermann's *Blue Humanities* (2023) highlights the adduced conclusions from the previous critics, not only reflecting on the correlation between oceanography and humanities, but also limnology.

Nonetheless, the most recent interest on blue ecocriticism does not entail an absent of contemporary body of literature about the oceans. On the contrary, oceans have always been present in literature and culture from Mahabharata to the Bible and Qur'an. Expectedly, oceans and marine wildlife have also started to emerge from the pages of children's books, and for the most part picture books. Cetaceans, notably, have long been mesmerising youngsters and grownups alike. Mark Peter Simmonds notes that, "there are some 90 species in the mammalian order Cetacea, and, remarkably for such large mammals, more are still being discovered. Each species has its own distinctive food and habitat requirements" (2017, 126). Cetaceans' mysterious nature certainly magnifies human curiosity. Nevertheless, academic research on the biggest mammal of our planet in the grounds of children's fiction continues to be mainly lacking. Apart from this, Sinead Moriarty has charted a vast corpus about whaling for children, stating:

In the whaling literature for children, the protagonists gain control of nature through killing the whale, which is made to represent the wild Antarctic landscape. Antarctic whaling narratives for children also tell the story of the development and demise of a large-scale commercial industry in the most inaccessible landscape in the world (2018, p. 39).

In this sense, whales have been perceived as a way of addressing the history of whaling and its consequences to marine life through the context of children's fiction. However, this article will focus on the representation of whales so as to promote ocean awareness, in light of Nathalie op de Beeck's suggestion: "Scholarship in children's literature (...) must pay greater attention to how texts represent and promote environmental awareness" (2017, p. 118). As the cited bibliography has asserted, the intersection of marine sciences and humanities prove to be a fruitful approach from

anthropocentrism and toward a biocentric perspective. As such, I argue that children's novels and picture books, whether by promoting activist intervention or helping readers to develop empathy, constitute a critical tool to address the human impact on the environment. The selected works, in particular, generate not only a deeper connection between children and whales (human and nonhuman dynamics), but also engage children with contemporary oceanic issues.

The Tale of the Plastic Soup Sea

From *Amos and Boris* by William Steig (1971) to *Humphrey, the Lost Whale* by Wendy Tokuda (1986) and *The Eye of the Whale* by Jennifer O'Connell (2014), whales have connected with children for the purpose of teaching them the oceanic way, their culture, troubles, and life threats. One of the most widespread dangers to sea creatures, particularly to cetaceans, is marine pollution. In conformity with E. C. M. Parsons and Danielle Monaghan-Brown:

Pollution comes in a variety of forms including industrial waste, agricultural chemicals, sewage, radioactive discharges, litter, oil, and noise. Cetaceans occupy a high trophic level and as such are particularly susceptible to contaminants. Small concentrations of these contaminants can accumulate and become magnified higher up the food chain (2017, p. 81).

Considering the global impact of pollution to cetacean populations, it is clear why numerous children's authors and illustrators expose this message. In addition, despite consisting of literary texts, the selected works comprise insightful information about the environment and, specifically, water-centric concerns.

Written by Karen Swann and illustrated by Padmacandra, *The Tale of the Whale* (2022) is narrated by a brown-skinned ungendered child who meets a whale. Enticed by the whale's song, the child accepts its invitation to an oceanic journey. In the first pages, whale and child share quality time together, exploring the diversity of oceanscapes: "We swam over mountains, through valleys of sand/An ocean in motion, a bright busy land/With carpets of colours that breathed with the sea.../I watched with the whale and the whale watched with me" (Swann, pp. 13-14). Padmacandra's illustrations draw the reader in with a rich palette of dark blues and greens, by means of emphasising the wonders of a healthy seascape. Although, as soon as they reach Arctic waters, the emotional depth of the picture book shifts. When its belly rumbled loudly, the humpback whale opened its mouth, revealing a ton of different plastics (Swann, pp. 15-16). Whale and child stare at each other, tears in their eyes, as the little one understands the purpose behind the sea journey: "I understand now what he'd brought me to see:/An old water bottle, a toothbrush, a straw,/A crisp packet, fishing nets, ten bags or more;/Some food wrap and cartons, a large coffee cup/The soup of the ocean, he'd swallowed it up" (Swann, pp. 19-20). Thereafter, the pages give way to four panels, presenting seals, turtles and seagulls endangered by marine debris. The message behind the picture book's title becomes clear: this tale is an unhappy one and it is the result of human impact on the oceans; the harsh reality exposed by the humpback whale is both warning and a cry for

help. The whale takes the child back home, both still saddened by what they know and experienced. Even so, the picture book concludes in a more positive tone as the child makes a promise to tell the world about the tale of the plastic soup sea (Swann, p. 26). Addressing the reader directly, the child remarks, "you've heard the whale's story... Please, change it with me". As Goga et al advocate, the representation of nature through various sources and media (including literature) may influence children's acumen towards the environmental crisis (2018, p. 1). This is a point previously stated by Sigler as well: "Currently, young readers can discover how to 'save the earth through kid power'" (1994, p. 150). This is most evident in *The Tale of the Whale*, which not only deals with the consequences of animal's ingestion of plastic debris, providing useful information to children on this matter, but also advertises more sustainable praxis. In fact, the last two pages illustrate a beach cleaning campaign organised by the main character of the story, which, in turn, accentuates the importance of collective action to a biocentric way of thinking. Swann's picture book is both lyrical and emotional, inspiring its readers to, as the main character does, listen to the tale of the plastic soup and respond to the environmental crisis.

Additionally, *The Whale Watchers* also highlights the major oceanic threats that whales and other sea creatures struggle with day by day. The narrative follows the story of Finn who, alongside his younger brother and mother, goes to Scotland during the summer holidays. As his mother is a marine biologist, Finn is cognizant of the insidious threats towards marine wildlife: "He knew about the whales all around the world that were washing up on beaches, their stomachs filled with plastic, the crabs found trapped inside scrunched-up plastic cups, the seabirds chocking on plastic bags and plastic bottle tops" (Poynter, p. 11). Despite the enthusiasm showed by his younger brother, Finn is less optimist in the matters of saving whales and other sea creatures. The protagonist is rather frustrated having to avoid the usage of plastic bags, bottles, and various plastic packaging, since he believes it is too late to save "these beautiful, majestic creatures of the deep" (Poynter, p. 13). Finn is not only saddened by the sea's living conditions, but also tired of facing these issues covered by the media, "he was trying to rub out the thought, erase the images of dying animals and plastic-polluted seas that had haunted him since" (Poynter, p. 17). In fact, he shows some symptoms of eco-distress (or eco-anxiety), namely stress and the feeling of helplessness regarding climate change, subsequent of experiencing an ecological event (e.g., witnessing a little whale's beaching in the Thames), as well as regularly reading news about ecological threats.

Finn's family visit to Scotland is a consequence of his mother's work. She explains how her job on tracking particular whales is fundamental, in order to learn more about their habits, behaviours, knowing their eating and breeding grounds. At some point in the novel, Finn addresses his anxiety, discussing it with his mother, while explaining her that trying to fight back climate change seems pointless, when humans will not stop using plastic. In contrast, Finn's mother gives a more positive perspective by stating:

Whales are not all dying, Finn! Yes, some are endangered, but you know, since the commercial whaling ban came in, numbers of certain whale species like humpbacks, have hugely recovered. When we put our minds to it and come

together, humans have the power to turn these things around..." (Poynter, p. 36).

Not only does she endorse the importance of collective action, but also clarifies how whale faeces are saving the planet. According to Joe Roman: "Whales can also transport nutrients to surface waters by releasing faecal plumes and urine in their feeding areas, as they respire, digest, metabolize, or rest at or near the ocean surface. This 'whale pump' likely plays a role in enhancing productivity in biological hotspots" (2014, p. 380). Therefore, whales are considered marine ecosystem engineers, because their excrements release nitrogen, which is increasingly beneficial for the ocean's health, as well as to the marine food chain. Furthermore, their faecal plumes are rich in iron, feeding, in turn, phytoplankton. Phytoplankton is also crucial for the environment since it is capable of absorbing high quantities of harmful carbon from the atmosphere. Nonetheless, upon hearing his mother exposing some whale facts, Finn continues to resist a more optimistic approach towards climate change and the environment. At this point in the novel, Finn apparently contrasts with the protagonists from Swan's picture book and Bilan's text, but this has much to do with him dealing with his own frustrations and, ultimately, eco-anxiety.

Children and the Creatures of the Deep

Bilan's *Calling the Whales* presents a brighter outlook for both whales and climate change. Satchen and Tulsi feel that it is their responsibility to protect the ocean and its sea creatures: "That's why we have to keep going with our work. We can't wait around for the adults to take action. It's up to us. As my dad says, we can do anything if we put our minds to it" (Bilan, pp. 5-7). The protagonists present themselves as young climate activists, being yearly involved in beach cleaning and other activities for the purpose of environmental awareness and protection, such as sponsored runs/walks and fund raising. One day, Satchen and Tulsi decide to take the boat to the nearest island for a fun nature walk day. During this activity, the children catch sight of a whale. Although puzzled at first about the whale's proximity, Tulsi quickly comments that whales can get lost, "confused by all sounds of boats' sonar and stuff" (Bilan, p. 25).

As reported by Lindy Weilgart, "marine mammals, but especially cetaceans, rely on sound for all of their vital functions such as food finding, predator or hazard avoidance, mating, group coordination, navigation, orientation, and overall sensing of their environment" (2017, p. 112). Living in a largely acoustic world, cetaceans, and marine wildlife in general hinge on sound for their vital activities. Underwater noise pollution is thus affecting most marine species and it has, in fact, become an animal welfare concern (Weilgart, p. 113). Despite emphasising this issue, the novel points out another threat to sea creatures, since the humpback whale is entangled in a fishing net: "The tangled mess of plastic rope and netting has wound itself around one of his fins, fixing Angus to the spot" (Bilan, p. 35). In point of fact, bycatch is one of the main threats to marine animals, predominantly to cetaceans. The unintentional capture of sea creatures is the result of the growing human population which continuously demands oceanic food sources, hence overfishing, as well as a hazardous lack of management and control in fisheries.

Calling the Whales not merely addresses these dangers but clarifies entanglement as a cetacean welfare issue:

The huge nets used to catch fish are cast way out from the boats. Some of them are walls of netting up to 100 km long and they're attached to the sea floor by thousands of hooks and traps. So many whales and dolphins get caught in them and then they can't get back up to the surface to breathe. Or they get trapped and starve (Bilan, p. 66).

Apart from this, the protagonists also mention possible solutions to the problem, speaking directly to the adult characters, "you can get involved in beach clean-ups to help remove this rubbish from our beaches. You can also make posters to let other people know about the dangers" (Bilan, p. 66).

Similarly, *The Whale Watchers* relates to cetacean entanglement. When Finn, his younger brother, and their new Scottish friend Skye explore the surroundings, they notice a young minke whale stranded on the beach (Poynter, p. 97). The kids quickly detect that the whale has plastic in its mouth: "It was a bit of plastic sheeting, a long, thin strip of it. It was the sort of material a box might once have been wrapped in, but now it had wrapped itself around the whale's head. It was trapped in his mouth, in the bristles of his baleen" (Poynter, p. 101). Shortly after, the kids find out the beached whale is Arrow – the missing minke whale Finn's mother was looking forward to study more about. Concomitantly, they also observe how many boats were dangerously close to the shore, pointing to the fact that the vessels were responsible for the disoriented whale.

Whilst some entanglements can be shed by the marine animals themselves, Arrow's entanglement required a whole team of trained biologists who gave their best to sooth the whale, keeping it calm and as hydrated as possible. A little crowd of locals gathered on the beach, and together they waited until the tide returned to shore and Arrow was afloat again. When that finally happened, the locals cheered noisily, but Finn's mother asked them to be quiet. Understanding they could cause further alarm and fright to Arrow, the crowd shifted their excitement to a "hushed silence, barely daring to breathe" (Poynter, pp. 128-129). Tourism, associated with whale-watching is also a growing threat to cetaceans, not solely because most whale-watching requires a large vessel, but boat noise could be responsible for interrupted whale communications too, triggering elevated stress levels in cetaceans (Parsons and Monaghan-Brown, p. 82). As a marine biologist, Finn's mother is notably aware of this growing issue and tries to inform the crowd on the best behaviour. As such, the scene also provides valuable information to the readers that may experience a similar circumstance and, in turn, showcases the adequate demeanour humans should display while dealing with cetaceans.

After saving the whale, the crowd gathered once again, in order to get involved in the beach cleaning campaign. One of Finn's mother colleagues talks about plastic pollution, particularly microplastics, and its impact on the ocean: "Did you know that just a single one-litter plastic bottle can break down into enough tiny pieces of plastic to out a piece on every single mile of beach on the planet?" (Poynter, pp. 141-142). The choice of wording is rather catching, not solely does it enhance children's curiosity, as well as it may affect adults' education on these matters (Beeck, 2017, p. 118). As Finn finally came

to terms with the fact that one plastic bottle could make a difference, the same response could be mirrored by the reader. Moreover, the author offers a large section of the book dedicated to the scientific terms and themes behind the story. On account of this, the readers can find more information about the human impact on the planet; single-use plastics; climate change; the various whale species; different whale facts (e.g., whale pump and whale fall); the impact of plastic on whales, and lastly some sustainable practices to revert these issues.

Conclusion

The texts examined here evoke a powerful message, representing real animals and real welfare issues. As underlined previously, cetaceans and most sea animals are exposed to various threats. By reading about environmental affairs, the child reader can thus be an advocate of these teachings, as declared by Tisnawijaya and Kurniati, "the discussion of Ecocriticism could be considered as a critical and creative tool for educating readers" (2021, p. 233). Furthermore, these narratives suggest that not only individual acts of change can make a difference, but also that environmental solutions should be pursued by the children themselves. In these texts, cetaceans are responsible for showing the oceanic issues they are struggling with, as well as promoting ocean awareness and social responsibility. Accordingly, I argue that the characters examined here developed eco-citizenship, as a result of their interaction with cetaceans. It is only upon experiencing the environmental crisis, namely cetacean entanglement, and the impact of plastic ingestion on whales, that children characters engage in ecological solutions. Notwithstanding Echterling's assertion on the limitations of passive activism, which assumes that "certain lifestyle changes will be enough to combat a wide range of environmental problems (...) and/or the government and industries will eventually follow the public's 'green' lead" (2016, p. 290), children's literature continues to hold the potential to educate younger audiences towards a biocentric, and water-centric, ways of thinking. Sustainability, conservation, animal welfare should be worldwide purposes. Children's novels and picture books are able to provide information about the current environmental concerns, while also giving prominence to the importance of empathy to animals. This is especially relevant in the case of sea mammals because the interactions between humans and sea wildlife is less likely to occur, apart from commercial watching. Children's literature is able to illustrate the wonders of our oceanic planet, inspiring us, and presenting action-oriented insights for the future generations to protect it better.

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Bionote

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**BIOPSYCHOSOCIAL PEDIATRIC NURSING
INTERVENTIONS IN THE ADOLESCENT DIAGNOSED
WITH TYPE 1 DIABETES MELLITUS: A LITERATURE
REVIEW**

**INTERVENÇÕES DE ENFERMAGEM PEDIÁTRICA
BIOPSISSOCIAL NO ADOLESCENTE COM DIAGNÓSTICO DE
DIABETES MELLITUS TIPO 1: UMA REVISÃO DA LITERATURA**

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Abstract

Type 1 Diabetes Mellitus (DM1) influences the adolescent's self-perception, behaviour, and integration into the social environment. The practice of Nursing Specialists in Children and Paediatric Health promotes their adaptation to the disease. The current study aimed to identify and reflect on the interventions of these specialist nurses with adolescents with DM1 and their families. We performed a literature review of the existing literature about the impact of DM1 on adolescents and the relevance of Specialist Nurses in Children and Paediatric Health in providing care to adolescents and their families. From online databases, we selected 21 publications. The nurse's intervention must contemplate the adolescent in his macrosystem. Since diagnosis, the specialist nurse must recognize the adolescent's difficulties, combining technical care with constant emotional support. The nurse's intervention enables the adolescent and

family to manage feelings, adjust the therapeutic regimen and integrate new routines into their daily lives.

Keywords: Diabetes Mellitus type 1, adolescent, family, nursing care, pediatric nursing

Resumo

A Diabetes *Mellitus* tipo 1 (DM1) influencia a autopercepção do adolescente, os seus comportamentos e a sua integração no meio social. A prática do Enfermeiro Especialista em Saúde Infantil e Pediátrica promove a sua adaptação à doença. Pretende-se identificar e refletir sobre as intervenções desse enfermeiro especialista junto do adolescente com DM1 e a sua família. Realizou-se uma revisão de literatura sobre o impacto da DM1 no adolescente e a relevância do enfermeiro especialista em Saúde Infantil e Pediátrica na prestação de cuidados ao adolescente e família. Foram selecionados 21 artigos publicados em bases de dados *online*. A intervenção do enfermeiro deve contemplar o adolescente no seu macrossistema. Desde o diagnóstico, é determinante que o enfermeiro especialista em Saúde Infantil e Pediátrica reconheça as dificuldades do adolescente, combinando o cuidado técnico com apoio emocional constante. A intervenção do enfermeiro capacita o adolescente e a família para a gestão de sentimentos, adequação do regime terapêutico e integração de novas rotinas no seu quotidiano.

Palavras-chave: Diabetes *Mellitus* tipo 1, adolescente, família, cuidados de enfermagem, enfermagem pediátrica

Introduction

DM1 is a chronic disease that occurs when the immune system destroys the pancreatic beta cells responsible for producing insulin, a hormone that converts glucose circulating in the bloodstream into energy for the cells. The symptoms that characterise DM1 are polydipsia, polyuria, enuresis, sudden weight loss, blurred vision, fatigue, increased appetite, and generalised discomfort. However, the diagnosis is usually late, since the symptoms are common to other pathologies, but it is made according to a protocol based on the evaluation of serum glucose levels or glycated haemoglobin. The aetiology of DM1 is still not fully known, but existing research says that it is related to the combination of genetic and environmental factors. This endocrine disease affects people of all ages (International Diabetes Federation, IDF, 2021).

According to the IDF (2021), insulin deficiency causes hyperglycaemia in its carriers that, in the long term, cause damage to the body such as cardiovascular diseases,

neuropathies, nephropathy, and retinopathy. In the short term, poor control of DM1 can cause hypoglycaemia and ketoacidosis.

People with DM1 need daily treatment with insulin in order to maintain blood glucose levels within the reference ranges considered normal; otherwise, the imbalance between these values could lead to the manifestation of symptoms that are difficult to reverse. The prevention of sequelae, or the postponement of their appearance, involves correct management of insulin administration, monitoring blood glucose levels, following a healthy diet, practicing physical exercise, and accessing health and education teams for diabetes. Compliance with this therapeutic plan is not always easy, for adolescents as for families, in some countries access to treatment is expensive and limited. Therefore, living with DM1 is a challenge for children, especially teenagers, and their families, even if they have access to all the necessary resources available (IDF, 2021).

According to the Annual Report of the National Diabetes Observatory (Portuguese Society of Diabetology, 2016), DM1 in Portugal affects 3327 children and young people aged between 0 and 19 years, corresponding to 0.16% of the population in this age group; this value has remained stable in recent years. However, the same source indicates that the incidence rate has been decreasing in the last decade, showing 11.5 new cases per 100,000 individuals in the same age group mentioned above.

In addition to the physiological consequences, DM1 causes emotional damage to the paediatric population and their families. The treatment of this pathology changes routines, affects social and family relationships, imposes dietary restrictions, subjects the child to painful procedures, causes body changes, and, in some cases, involves hospital admissions. In addition, children and adolescents find it difficult to accept the disease, factors that lead to anger and stress in adolescents and their caregivers (Alencar et al., 2013; Aguiar et al., 2021). Allen et al. (2016) reinforce that, in the long term, these adolescents are more likely to develop depression and anxiety, as well as difficulty in establishing relationships and maintaining a good family environment.

Adolescence is a challenging stage, both in terms of psychomotor development and in terms of socio-affective development. At this life cycle stage, several complex biopsychosocial changes affect young people, making adolescence one of the most impactful transition stages of human development. The same authors support that physical, psychological, and social changes influence the way adolescents see themselves and relate to others. The diagnosis of a chronic disease, such as DM1, is a huge change in these young people's lives and how they see themselves (Alencar et al., 2013).

That said, living with DM1 is a challenge, especially for adolescents, since this phase alone contains a vast set of biopsychosocial changes (Batista et al., 2021). In this sense, the specialist nurse in Child and Paediatric Health has a privileged role with adolescents with DM1 and their families. Its practice must be based on the most recent and robust scientific evidence, so the planned interventions must result from the combination of the best and most current scientific knowledge with the care expectations of the individual being cared for (Peixoto et al., 2016), contributing thus review for the production of foundations for sustained nursing practice.

Objectives

The realisation of this literature review aims to understand the reality of specialised care for children/adolescents and families in the context of illnesses, such as diabetes. The specific objectives are to understand the impact of DM1 on the biopsychosocial health of adolescents and their families, to deepen their knowledge about action strategies and nursing interventions with adolescents with DM1 and their families from the perspective of specialist nurses in Child and Paediatric Health, as well as to reflect on the importance of this specialist nurse in the follow-up of adolescents with DM1 and their families.

Methodology

A literature review, including some integrative review criteria, was based on the assimilation of essential aspects that characterise DM1 to understand its impact on the biopsychosocial health of adolescents and their families, thus seeking to list specialised nursing interventions that support the importance of the specialist nurse in Child and Paediatric Health. However, the present review also includes other professional's intervention, as their actions could also be integrated in the specialised nursing care.

When conducted the narrative literature review, and after identifying and analysing the problem under study, the path to follow was defined to gather, analyse, compare, and describe the available scientific evidence (Hopia et al., 2016).

This time, we used the databases through the EBSCOhost search engine, namely the CINAHL Complete, MEDLINE Complete, and Cochrane Database of Systematic Reviews databases. Also, other important databases for the health area were consulted, such as the Scientific Electronic Library Online (SciELO), the Open Access Scientific Repositories of Portugal (RCAAP), and PubMed. In the latter, and to ensure the scientific nature of the research, the Medical Subject Headings (MeSH) terms to be used were identified, namely: (Type 1 Diabetes Mellitus) AND (adolescent OR family) AND (nursing care OR paediatric nursing); (Diabetes Mellitus tipo 1) AND (adolescente OR família) AND (cuidados de enfermagem OR enfermagem pediátrica); (Diabetes Mellitus tipo 1) AND (adolescente OR familia) AND (cuidados de enfermería OR enfermería pediátrica), in isolation, but also combined by the Boolean AND, OR operator.

It should be noted that the research was carried out according to the following inclusion criteria: published articles only, articles with a production date of the last 10 years and availability of full text in Portuguese, English, or Spanish. Exclusion criteria included all articles that included other pathologies, including type 2 diabetes, and studies carried out in the adult population.

Sequentially, the research was conducted, and the consequent compilation of the scientific production found on the themes that make up the subject under study, under the defined inclusion and exclusion criteria requirements. Therefore, a PRISMA flowchart

was built to show the process of identifying and selecting relevant literature (Page et al., 2021).

After reading and interpreting the titles and respective abstracts, the documents with the most appropriate content were selectively sorted, taking into account the established objectives, and comparing them in terms of the information offered. Finally, the product of the research and its treatment was combined and compiled, resulting in the present narrative document, not neglecting its interconnection with some reference documents for the nursing practice of Nursing Specialists in Children and Paediatric Health.

Results

From the initially carried out research, 301 searched documents were obtained, of which 38 were eligible according to filtering with the application of the inclusion and exclusion criteria mentioned above. A careful reading and interpretation of the titles and abstracts of each one resulted in 21 articles, as shown in Figure 1.

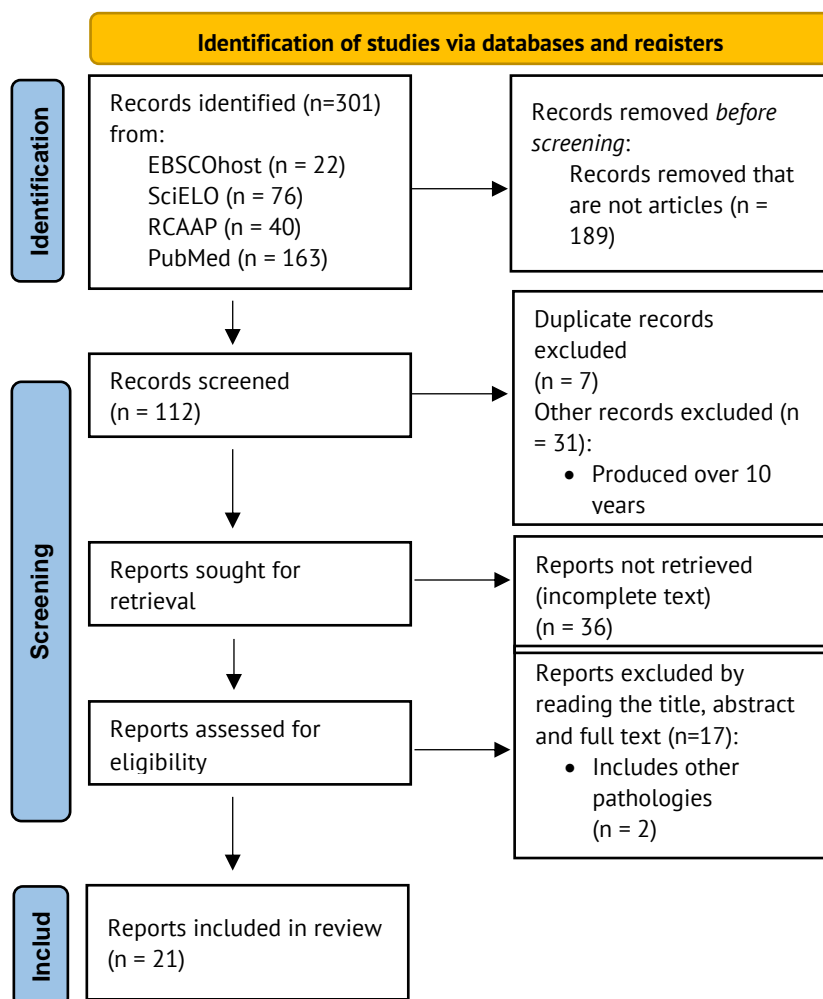


Figure 1. The PRISMA Flow Diagram of Study Selection

According to the bibliography included we grouped by types of interventions from publications that were summarised as shown in Table 2 (authors, year, title, and focus of attention); it was verified that DM1 causes a great biopsychosocial impact on adolescents and their families. When DM1 appears in adolescence, in addition to dealing with the conflicts inherent to age, adolescents have to learn to manage the disease, which proves to be extremely difficult since it requires discipline and a change in lifestyle. Thus, the need to change their lifestyle affects their physical, emotional, and social conditions, which is why nurses must create a relationship with adolescents and their families from the diagnosis onwards, considering the fundamental aspects that prioritise the relationship between the biological, psychological and social contexts of health.

Table 2
Articles included in the literature review

Authors, Year, Title	Objectives	Methodology	Results
Aguiar G., et al. (2021). Children with Type 1 diabetes Mellitus: the experience of illness.	Identify the main challenges faced by children with type 1 diabetes mellitus and describe their coping strategies	Qualitative study conducted with a semi-structured interview	- The process of coping with the disease is different for each adolescent; - Family support and health professionals are essential.
Alencar D., et al. (2013). Feelings of adolescents with Diabetes Mellitus regarding the process of living with the disease.	Understand the experience of adolescents facing the process of living with diabetes	Descriptive-exploratory research with qualitative approach	- Understanding the behaviours, fears, and anxieties of adolescents with DM1 for more personalized support.
Allen J, et al. (2016). A longitudinal examination of hope and optimism and their role in type 1 diabetes in youths.	Test the longitudinal associations between hope and optimism and health outcomes (i.e., HbA1c and self-monitored blood glucose [SMBG]) among youths with Type 1 diabetes mellitus (T1DM) over a 6-month period	Longitudinal research	- Importance of hope promotion in the management of DM1.
Batista A., et al. (2021). Adolescents with type 1 diabetes mellitus and their process of building autonomy for self-care.	Analyse the process of developing autonomy for self-care in adolescents with type 1 diabetes mellitus	Descriptive-exploratory research	- Supporting adolescents in building autonomy for self-care to overcome difficulties in managing DM1 and preventing complications.
Borges B., et al. (2016). Type 1 Diabetes Mellitus in adolescents: from diagnosis to the daily contact with the illness.	Understand the daily life of adolescent patients who live with Diabetes Mellitus Type 1	Exploratory and qualitative study	- Understanding the daily lives of adolescents with DM1 allows for humanised and personalised nursing care.
Cruz, D., Collet, N., & Nobrega, V. (2018). Quality of life related to health of adolescents with DM1: an integrative review.	Analyse the scientific literature on health-related quality of life (HRQOL) of adolescents with type 1 diabetes mellitus	Integrative review	- Knowledge about the quality of life of adolescents with DM1 can contribute to the improvement of nursing care.
Feitor S., et al. (2020). Community empowerment in school health – adolescent with diabetes mellitus type 1.	Elaborate a Nursing Care Plan Model aimed at training the school community with adolescents with DM1, using ICNP 2017	Literature review	- Health education in schools to include adolescents with DM1.
Flora M., & Gameiro M. (2016 ^a). Self-care of Adolescents with	Identify the knowledge of adolescents with T1DM about the disease and	Descriptive-analytical and cross-sectional study.	- Directed intervention to increase the levels of knowledge about DM1.

Type 1 Diabetes Mellitus: Knowledge about the Disease.	respective care; to analyse the relationship between the knowledge of adolescents with T1DM about the disease and respective care and age and gender		
Flora M., & Gameiro M. (2016b). Self-care of adolescents with type 1 diabetes: responsibility for disease management.	Determine the responsibility of adolescents with T1D for self-care roles, and analyse the relationship between the responsibility of adolescents with T1D for self-care roles and age and gender	Descriptive-analytical and cross-sectional study.	<ul style="list-style-type: none"> - Responsibility in self-care in the face of DM1; - Family, peers, and health professionals as support.
Fornasini S., Piras E., & Miele F. (2019). The consequences of type 1 diabetes onset on family life. An integrative review.	Synthesise what is known about the consequences of T1DM onset for families and, in particular, how parents share the emotional, practical and educational burden of care connected with diabetes management	Integrative review	<ul style="list-style-type: none"> - DM1 as a familial disease; - Family-centred care; - Focus on emotions, routines and precise knowledge about DM1.
Fragoso L., et al. (2019). Self-Care Among Type 1 Diabetes Mellitus Bearing People: Adolescents' Experience	Identify the adolescents' experiences in the management of diabetes mellitus, regarding self-care	Descriptive research with a qualitative approach	<ul style="list-style-type: none"> - Importance of supported self-care; - Adherence to the therapeutic regimen.
Freitas K., et al. (2020). Self-report of child and adolescent in his daily lives with diabetes: narrative study.	Understand the daily life of children and adolescents diagnosed with type 1 diabetes mellitus	Exploratory study with a qualitative approach	<ul style="list-style-type: none"> - Family changes; - Changes in lifestyles; - Psychological impact; - Social adaptation.
Galler A., et al. (2020). Psychological care in children and adolescents with type 1 diabetes in a real-world setting and associations with metabolic control.	Assess psychological care in children and adolescents with type 1 diabetes in a real-world setting and to evaluate associations with metabolic outcome	Longitudinal and comparative analysis	<ul style="list-style-type: none"> - Psychological care is associated with better disease control.
Gomes G., et al. (2019). Family experiences in the diagnosis of diabetes mellitus in children/adolescents	Identify the experiences of the relative in the diagnosis of Diabetes Mellitus in the child/adolescent	Qualitative research	<ul style="list-style-type: none"> - Understanding the experience and supporting the adolescent and family allows the nurse to reduce the impact of the diagnosis.
Leal D., et al. (2012). The experience of family members of	Describe the significant experiences of family members living with	Qualitative research	<ul style="list-style-type: none"> - Importance for the nurse to understand the family's experience with diabetes

children and adolescents with type 1 diabetes mellitus.	children and/or adolescents with type 1 diabetes		and include it in the care plan.
Machado T., et al. (2021). The child with Type I diabetes: implications for Nursing.	Evaluate, through research on previously published works, how the nursing professional participates in the treatment of type 1 diabetes in children	Descriptive-exploratory research with qualitative approach	- Dynamization of nursing intervention to minimise anxiety and pain in the face of diabetes.
Nass E., et al. (2019). Psychosocial self-efficacy in young people with diabetes mellitus and its influence on self-care.	Identify psychosocial self-efficacy in young people with Type 1 diabetes mellitus and its association with sociodemographic variables, health profile, and search for health care.	Cross-sectional study	- Influence of the psychosocial component on the self-care of adolescents with DM1.
Pérez-Marín, M., Gómez-Rico, I., & Montoya-Castilla, I. (2015). Type 1 diabetes mellitus: psychosocial factors and adjustment of paediatric patient and his/her family. Review.	Study the main psychosocial factors associated with the adjustment of these paediatric patients and their families	Literature review	- Implementation of psychosocial intervention in diabetes.
Pires A., Aparícia G., & Duarte J. (2016). Validation study of the scale Child's satisfaction with the diabetes nursing consultation	Validate the scale "Child's satisfaction with the diabetes nursing consultation"	Quantitative, cross-sectional and analytical study	- Relevance of the diabetes nursing consultation to children and adolescents.
Wang Y., Brown S., & Horner S. (2013). The school-based lived experiences of adolescents with type 1 diabetes.	Obtain an initial understanding of school-based lived experiences of adolescents with T1DM to serve as a foundation of future research	Heidegger's hermeneutic phenomenological approach	- Intervention with the aim of achieving autonomy in the management of DM1; - Empower the school community; - Proactivity in school health.
Zanatta E., et al. (2020). Experiences of adolescents with type 1 diabetes.	Understand how adolescents live with type 1 diabetes and describe their sociodemographic profile	Quantitative/qualitative exploratory, descriptive research	- Great impact of DM1 on the routine of adolescents; - Need for family, social and health support.

To promote the autonomy and involvement of adolescents throughout the therapeutic process, it is important to establish a partnership with the family and the entire health team. To ensure the success of the whole process, it is essential that peers, teachers, and the community are integrated in the same way, not only in the therapeutic regime but also in general, leading to the gradual acceptance of the disease and its limitations (Ramos & Figueiredo, 2020).

The discussion that follows will initially make a special allusion to the role of the specialist nurse in Child and Paediatric Health, not only in DM1 but also in the family context of adolescents. Subsequently, the focus is given to the literature found on the psychological domain of specialised nursing intervention, which will focus on aspects related to acceptance of the disease, coping strategies to deal with it, and the necessary knowledge to build on it. This is followed by intervention in the biological field, which includes the readaptation of lifestyles regarding food and physical exercise, glycaemic control, and insulin administration. Finally, regarding the social domain, issues related to the support of peer groups, inclusion in support groups, and intervention in the school context from the point of view of health education will be addressed.

Discussion

The diagnosis of DM1 in such a challenging stage of life as adolescence is a set of demands that place adolescents and their families in a sensitive position from the point of view of managing their health (Alencar et al., 2013). The increased responsibility that is abruptly attributed to them, as well as the associated losses represent a kind of shock through which a grieving process in the face of the disease begins (Leal et al., 2012), which extends from denial to acceptance of the illness.

In the context of DM1, according to Pires et al. (2016), the good results behind the nurse's intervention are fundamental therapeutic education, so "nurses have a key role in the diabetes consultation, and should develop their educational practice in a humanised, individualised way and adapted to the characteristics of the child/ family" (p. 43). In accordance with the Order of Nurses, Pires et al. (2016) advocate that within the scope of health care in diabetes are taken into account the needs of adolescents facing the disease, considering their particularities. On the other hand, the Portuguese Nurses Order (2011), through the Guiding Guides for Good Practice in Child Health Nursing, states that therapeutic education must be governed by attitudes, values, beliefs, objectives, preconceived ideas, and the cognitive availability to learn.

In general, it is crucial that the specialist nurse in Child and Paediatric Health responds to the real and potential needs of adolescents, adapting their intervention to their abilities, respecting their learning and adaptation times, with space for the expression of emotions facilitated by the establishment of an empathetic and trusting therapeutic relationship, as advocated by the Regulation no. 422/2018 -Regulation of Specific Skills for Specialist Nurses in Children and Paediatric Health Nursing (2018). Also, Gomes et al. (2019) highlight the differentiated comprehensive care that nursing must comply with, which is also multidisciplinary, thus developing health education strategies to promote adherence to therapeutic measures, not only by adolescents but also by their families.

Fornasini et al. (2019) describe DM1 in adolescence as a "family disease", which affects the entire system and functioning of a family. According to Cruz et al. (2018), the family is one of the main pillars of adolescents in the process of adapting to the new health condition, so for Gomes et al. (2019), it is essential that the specialist nurse Child

and Paediatric Health also understand the feelings and needs of family members in the face of the diagnosis, that they are able to provide the greatest and best support to their adolescent. Nass et al. (2019) also recognise the importance of the family throughout the process but add that it does not replace all the multidisciplinary professional follow-up to which adolescents are entitled. Among several interventions, Gomes et al. (2019) highlight the transmission of knowledge through awareness-raising actions and information documents, as well as the sharing of experiences in support groups designated for this purpose. Once the family's needs have been identified, Gomes et al. (2019) say that nurses can contribute in a more sensitive way to reduce the impact of the diagnosis, as well as support the family member and the child/adolescent in coping with the changes required by the disease, thus promoting their potential well-being and the best possible quality of life (Machado et al., 2021).

The authors mentioned above argue that nurses should constantly evaluate their intervention and the strategies adopted, adapting them accordingly to encourage the development and biopsychosocial well-being of adolescents and their families. The way in which specialist nurses are available, their conduct in transmitting and sharing knowledge, and the involvement of adolescents and families in the care plan are reflected in self-care in the face of DM1 (Pires et al., 2016). However, because the development of specialist nurse skills is also carried out from a preparatory perspective, the same guide recalls that the professional who will implement health education strategies must continuously train and improve their practice in order to promote and facilitate adherence of adolescents and their families to the necessary therapeutic measures (Portuguese Nurses Order, 2011).

For all the implicit alterations, Freitas et al. (2020) emphasise the great psychological impact that the complexity of DM1 causes, not only because of the biological transformations it entails but also because of the social changes it brings about. By demanding closer and more regular care, adolescents with DM1 are faced with social repercussions on their relationship with the family and peer group. This relationship influences how adolescents experience their disease process (Freitas et al., 2020). According to Gomes et al. (2019), the greater the responsibility of adolescents for self-care, the better acceptance of their health condition and the greater adherence to established therapies contributing to a better way of being in their social environment.

Consensually, the main focuses of attention listed by the consulted authors are glycaemic control, insulin administration, changing eating habits, practicing physical exercise, emotional instability, and readaptation to the social context (Borges et al., 2016; Freitas et al., 2020; Machado et al., 2021).

Interventions in the psychological domain

The diagnosis of DM1 causes a range of adverse feelings in adolescents, which makes it difficult for them to live with the disease (Nass et al., 2019). Unexpectedly, adolescents find themselves responsible for managing their health and survival, experiencing feelings such as sadness, anger, fear (Alencar et al., 2013), frustration, and

anxiety (Aguiar et al., 2021). According to the same authors, the most expressive feeling, and also the most lasting, in the process of adapting to the disease is a revolt since young people feel constantly challenged by the new health condition, seeing their way of being and existing compromised and, consequently, their future.

In this order of ideas, it is essential that the specialist nurse in Child and Paediatric Health creates the appropriate environment for adolescents and their families to express themselves, free from constraints or judgments, helping them to adopt coping strategies to deal with their own emotions and feelings (Portuguese Nurses Order, 2011). In addition to managing emotions, Batista et al. (2021) add that it is crucial to work on motivational issues since the desire to learn leads to greater and better development of autonomy, both in cognitive and behavioural terms.

In the long term, as stated by Allen et al. (2016), the diagnosis of DM1 in adolescence entails a predisposition to mental consequences, namely depressive and anxiety states. As such, a study carried out by these authors, supported by scientific evidence described by them, realised that the hope that adolescents face their DM1 diagnosis has a direct influence on the health gains obtained. Through the theory of hope, the authors understand the energy of each individual to plan a path and a set of actions to the detriment of a goal, including their intentionality and persistence.

Until adolescents perceive the disease with some normality in their daily lives, they need to accept it. However, acceptance of the disease first involves a complex process of knowing how to deal with it, in so far as adolescents must understand that it is harmful to them and can cause them serious problems, that the behaviours to be adopted are effective in coping with and controlling the disease, and that the difficulties in implementing specific actions and behaviours are overcome by their benefits (Nass et al., 2019).

Complementarily, Galler et al. (2020) demonstrate that intervention in the psychological domain reflects positive effects on the management of DM1 in adolescents, effects that are even more notorious when associated with the construction of knowledge about the disease.

Intervention in the cognitive sphere should be done gradually since having diabetes requires very precise and clear knowledge about the disease, its manifestations, and alterations, as well as future complications (Flora & Gameiro, 2016a). The management and the way in which information about care is transmitted should be the focus of attention of specialist nurses in Child and Paediatric Health, appropriate for the literacy of adolescents and their families (Flora & Gameiro, 2016a), as it is a continuous process that can be repeated as many times as possible. Times are opportune so that the care proves to be effective (Portuguese Nurses Order, 2011). According to the Guiding Guides for Good Practice in Child Health Nursing (Portuguese Nurses Order, 2011), education about diabetes should adjust to the characteristics of each person, according to their “age group, disease stage, maturity, lifestyles, cultural sensitivity” (p. 95), being as direct as possible to the priorities established in partnership between the nurse, the adolescents, and the family.

Adolescents tend to seek and strengthen their knowledge about diabetes when they obtain positive results through their actions based on prior knowledge acquired, thus becoming increasingly autonomous in the management of behaviours and emotions (Batista et al., 2021). Furthermore, when adolescents and their families are properly informed about the disease and its implications, they tend to incorporate and carry out adaptation mechanisms more naturally (Aguilar et al., 2021).

Thus, over time, and with due monitoring and emotional support, the literature makes it known that adolescents effectively adapt to DM1 and its requirements, becoming aware of the chronicity of the disease and possible consequent complications, thus assuming the role of main agents in the management of their health condition (Pérez-Marín et al., 2015; Nass et al., 2019; Freitas et al., 2020; Galler et al., 2020; Zanatta et al., 2020).

Interventions in the biological domain

As previously pointed out, DM1 requires the acquisition of detailed knowledge about the disease so that adolescents recognise their own needs, to the detriment of maintaining their well-being. In this sense, several authors introduce the notions of self-care (Flora & Gameiro, 2016b) and autonomy (Cruz et al., 2018; Batista et al., 2021) in diabetes, which involve care related to the behaviours to be adopted and, or readjust. According to Flora and Gameiro (2016a), self-care comprises behaviours related to blood glucose monitoring and respective records, actions in the face of hyper or hypoglycaemic episodes, insulin administration, diet compliance, and physical exercise.

The autonomy of adolescents in their self-care is better and more effective the greater the support of health professionals and parents, support that contributes not only to an improvement in the quality of life (Cruz et al., 2018) but also to enhance the success of decisions made in the control of diabetes (Batista et al., 2021). Also, in this line of thought, Fragoso et al. (2019) state that nurses should guide adolescents toward their autonomy for self-care, making them responsible (Flora & Gameiro, 2016b) and providing them with the necessary tools to effectively manage their health situation, especially with regard to respect to the adjustment of lifestyles.

Regarding the adequacy of lifestyles, the consulted literature is unanimous when it says that the greatest difficulties pointed out by adolescents are related to food issues (Fragoso et al., 2019; Batista et al., 2021). According to Batista et al. (2021), counting carbohydrates and adapting the diet to glycaemic and therapeutic values are among the biggest challenges experienced by adolescents, along with dealing with the dichotomy between eating food out of desire or impulse and eating controlling this food to better health (Fragoso et al., 2019). Despite not being described in the bibliography found, and in line with Regulation no. 422/2018, the intervention of the specialist nurse in Child and Paediatric Health may involve: establishing adequate and diversified food plans, practicing the exact and safe calculation of carbohydrates, offering alternatives for replacing hypercaloric foods, and negotiating the intake of these foods at special times, not neglecting a multidisciplinary intervention with the nutritionist.

As opposed to difficulties in eating, the practice of physical activity and sports were facilitating aspects in the maintenance and control of diabetes since they were regular habits in the daily lives of adolescents (Fragoso et al., 2019). According to Fragoso et al. (2019), praising and encouraging the maintenance of physical exercise habits may be part of the nurse's and family's actions to effectively maintain these habits. It is also important that the nurse reinforces teachings about the care to be taken before, during, and after the practice of physical activity in the context of diabetes in order to prevent the appearance of possible complications (Portuguese Nurses Order, 2011).

Still, the acts of controlling blood glucose and self-administering insulin are also delicate issues, named by the adolescents interviewed in a study carried out by Fragoso et al. (2019), not only for self-inflicted pain but also for the visual impact caused on others around. The authors add that alternating between body surfaces to assess blood glucose and administer insulin are more specific challenges experienced by adolescents. Accordingly, the nurse must ensure that the teaching is properly assimilated, initially demonstrating and executing it and, later, observing and supervising its implementation by the adolescents. The care to be taken with the conservation of the medication, as well as the handling and disposal of needles and other necessary materials, should be addressed and duly clarified (Machado et al., 2021). Despite emphasising the autonomy and responsibility of adolescents, Fragoso et al. (2019) recall that the family should be included in this type of teaching so that they can assist and/or replace the adolescents whenever necessary.

One way to get around this embarrassment can be the acquisition of the most recent and intelligent continuous insulin infusion pumps, which provide an improvement in the quality of life of diabetic adolescents (Batista et al., 2021). However, the costs associated with this equipment are not exactly accessible to all families, so they say it is an important aspect to be considered by nurses, who must mobilise efforts to bring this matter to government policies so that they share access. The same authors add that the way in which the treatment is carried out has a great influence on how adolescents accept the disease and manage their self-care.

Interventions in the social domain

The way of being before the family, the peer group, and the rest of society changes as soon as adolescents are diagnosed with DM1. The care that needs to be put into practice, described above, places adolescents in a position considered socially sensitive (Zanatta et al., 2020). The impact caused on people who observe the adolescents' behaviours in their self-care facing diabetes can make them the target of discrimination and social exclusion. So it is important for adolescents to have a cohesive support network, essentially integrating family, friends, and health professionals, who will help them face every day life's difficulties with greater success.

Adolescents should live with people and groups who experience the same concerns since sharing experiences increases understanding and reflection that their fears and difficulties are not unique (Zanatta et al., 2020). Nurses must bring together adolescents

with DM1, through support groups, inside or outside the school environment, providing the sharing of similar experiences so that they do not feel socially excluded. These groups should be dynamic and active, providing good times to adolescents outside the healthcare environment (Flora & Gameiro, 2016a) without impositions or judgment of attitudes, avoiding emphasising the negative connotation attributed to the disease (Zanatta et al., 2020). It is essential that adolescents continue to interact with friends and other groups of peers, as the involvement of the latter in the process of adapting to the disease facilitates the social well-being of diabetic adolescents, contributing to the construction of self-confidence in adherence to treatment (Zanatta et al., 2020). However, it is necessary to take into account that the influence exerted by peers and the desire to integrate can constitute threats to the management of the disease since they can lead to deviant behaviours regarding aspects of blood glucose monitoring and medication administration, whether in adjusting lifestyles to the needs of the disease (Wang et al., 2013).

As is known, a large part of the teenagers' day is spent in the school context, where some uncomfortable and stigmatising situations may arise for them (Zanatta et al., 2020). Thus, Feitor et al. (2020) state that the nurse has a role as a mediator between health and education, and the specialist nurse has a fundamental role in preparing the school environment to normalise the needs and practices of adolescents with DM1, both with teaching staff and non-teaching staff or with students. Furthermore, as the increase in knowledge is directly proportional to acceptance and empowerment, the school community must know the pathophysiology of diabetes, understand concepts of hyper and hypoglycaemia, recognise alarm signs, understand the need for therapy, and be prepared to act in emergency cases (Wang et al., 2013; Feitor et al., 2020).

In conclusion, the role of a specialist nurse in Child and Paediatric Health is fundamental in the monitoring of adolescents with diabetes by establishing a partnership with the child/youth and family in order to promote an adequate health plan. Thus, it must mobilise resources, taking into account particularly demanding situations such as diabetes due to its complexity, and use different approaches and therapies, taking into account all life cycle phases. No less important, the nurse should take into account the psychological, biological, and social domains when intervening with adolescents with DM1, never in isolation, but in their reciprocal interaction, each of the domains being able to influence each other.

In general, from the moment of diagnosis and as long as the treatment lasts, it is crucial that the specialist nurse in Child and Paediatric Health recognises each of the difficulties that adolescents face, respects the meanings attributed to the disease, and understands its manifestations, combining care necessary technical support with constant emotional support (Alencar et al., 2013; Borges et al., 2016; Zanatta et al., 2020). The nurse's approach to the disease must be realistic (Pérez-Marín et al., 2015), positivist (Allen et al., 2016), holistic (Gomes et al., 2019), and multidisciplinary (Galler et al., 2020). According to Batista et al. (2021), family and health professionals are fundamental in this health-care construction, supporting them to reach cognitive, behavioural, and emotional

autonomy to trust in their potential to perform self-care, and overcoming the challenges to reach maturity.

Conclusion

The specialist nurse in Child and Paediatric Health interventions are decisive when the diagnosis of DM1 appears in the lives of adolescents and their families since the nurse's role must always be holistic, considering that the biological, psychological, and social needs of the target person care are inseparable. Therefore, nurses specialising in Children and Paediatric Health, in their daily practice with adolescents and their families, must establish a negotiated care partnership, respecting their times and needs, with the aim of training them to manage their feelings, adapting their regime therapy, and integrating their new routines into their social environment.

The way nurses perform their role will directly influence the involvement of adolescents and their families in their treatment, as the process of becoming a teenager may bring with it the appetite for some less appropriate behaviours from the point of view of health promotion in diabetes. Thus, the nurse must be attentive to the slightest signs of frustration and revolt so that these do not compromise adolescents' behaviours and health gains. Unquestionably, the support network constituted by the nurse and family is an important foundation in encouraging the autonomy of adolescents with DM1 for their self-care, contributing to their general well-being, and overcoming the obstacles imposed by the disease and the very challenging phase of the disease.

With this review, it was possible to identify the pathophysiological and statistical aspects of DM1 and understand its impact on the biopsychosocial health of adolescents and their families. Nevertheless, this production allowed deepening knowledge about strategies and interventions of specialised nursing in Child and Paediatric Health with adolescents with DM1 and their families, reflecting the importance of specialist nurses in their follow-up.

It should be noted that the main limitation experienced was the research found intervention in the practice of specialised care in Nursing Children and Paediatric Health. Although it is considered to have made contribute to evidence-based practice concerning the care provided to adolescents with DM1 and their families, the pertinence of carrying out new research studies on the topic addressed is praised. As an example, a systematic literature review is suggested, as well as the development of primary studies on each of the biopsychosocial intervention domains described.

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