

Review articles

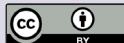
Curricular intervention protocol for teaching learners with Autism Spectrum Disorder: an integrative review

Eduardo Pimentel da Rocha¹<https://orcid.org/0000-0002-9937-7806>**Amanda Tragueta Ferreira-Vasques**¹<https://orcid.org/0000-0003-0489-3611>**Dionísia Aparecida Cusin Lamônica**¹<https://orcid.org/0000-0002-9381-0680>

¹ Faculdade de Odontologia de Bauru da Universidade de São Paulo, Bauru, São Paulo, Brasil.

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ABSTRACT

Objective: to conduct an integrative review of scientific papers indexed in national and international databases on curricular intervention protocols, which favor the linguistic aspects, translated and cross-culturally adapted to Brazilian Portuguese for the teaching of individuals with Autism Spectrum Disorder.

Methods: a survey of scientific studies indexed in Pubmed, *Portal Regional da Biblioteca Virtual em Saúde*, Web of Science, Scopus and ERIC databases was carried out from February to March 2018. Papers in English and Portuguese language of the last 20 years on the proposed theme were selected. The inclusion criteria used were: to be a school curricular intervention protocol that favors the linguistic aspects; to be directed to learners with Autism Spectrum Disorder; to be translated and cross-culturally adapted to Brazilian Portuguese.

Results: 214 papers were analyzed revealing the lack of studies on the topic. These data indicate a gap in national basic education, which may corroborate the low qualitative aspects of inclusive education in the country. The Collaborative Model for Promoting Competence and Success for Students with Autism Spectrum Disorder enables a more effective teaching of learners with autism, since this protocol empowers teachers in curricular adaptation to also develop the language skills and overcome the educational challenges of the students with this condition.

Conclusion: the Brazilian scenario is that of absent instruments, which may interfere with the quality of inclusive education in Brazil.

Keywords: Autistic Disorder; Child Development; Learning; Teaching; Education

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Corresponding address:

Eduardo Pimentel da Rocha
Rua Canadá, 18-33, Jardim Solage
CEP: 17012-901 - Bauru, São Paulo, Brasil
E-mail: edu_pimentel@yahoo.com.br

INTRODUCTION

In the last century, individuals with special needs (SN) gained important social, economic and educational rights, which brought visibility to this population¹.

Regarding education, access was achieved through the strengthening of school inclusion policies in Brazil and in the world, which made possible, in an increasingly way, in the last 20 years, that apprentices with various SN have become part of the regular classrooms^{2,3}.

According to an article published by the Portal Brasil do Ministério da Educação, about the inclusive reality in Brazil, in 2014 678,718 thousand students with SN were regularly enrolled in regular classes of basic education in the country⁴.

According to the 2016 *Dados do Censo Escolar da Educação Básica of the Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira* (INEP), 57.8% of the Brazilian primary schools in that year had students with some sort of SN, regularly enrolled⁵.

Although it is difficult to determine the current percentage of students with SN, due to the lack of official data, enrolled in the regular classes of the country, with the expressive number of schools, especially those of the public system, it is inevitable to think about the quality of the teaching offered to them, especially those with Autism Spectrum Disorder (ASD), the focus of this study.

The ASD, which is a neurodevelopmental disorder with an unknown multifactorial cause, has as a characteristic the impairment of the linguistic and social functions in the individuals with this condition. As it is a spectrum, individuals can vary from mild to severe levels, having the total impairment of the aforementioned functions in the most severe cases to the development of high skills and giftedness in milder cases⁶.

The most recent literature on inclusive education in Brazil has pointed to the expansion of educational services that have taken place over the last decades in the country as an important step in the Brazilian educational scenario. However, several authors have warned that it was not accompanied also by a linear evolution in its qualitative aspects⁷⁻⁹.

It is considered educational aspects the teacher training, as well as the development of materials, tools, strategies, techniques, among others, that allow the full development of the learner with SN at their school level.

Considering that in the year 2000, 164 countries, among them Brazil, signed a commitment in Dakar, in the so-called The Dakar Framework for Action, to pursue six goals of education for all by 2015, with one of its main aspects being the quality of education and the fundamental constitutional guarantee for access to quality education, this study aimed to carry out an integrative review of scientific papers indexed in national and international databases on school curricular intervention protocols, that favor the linguistic aspects, translated and cross-culturally adapted to Brazilian Portuguese for the teaching of individuals with ASD.

METHODS

Considering the inclusion criteria used for the research: 1. to be a school curriculum intervention protocol that favor the linguistic aspects; 2. to be directed to learners with ASD and; 3. to be translated and cross-culturally adapted to Brazilian Portuguese; a survey in the databases Education Resources Information Center (Eric), PubMed, Scopus, Portal Regional da Biblioteca Virtual em Saúde (BVS) and Web of Science was carried out, aiming to answer the research question: What are the school curricular intervention protocols translated and cross-culturally adapted to Brazilian Portuguese, that favor the linguistic aspects, available for the use of the Brazilian teachers for the teaching of students with ASD?

The surveys were carried out from February to March 2018, considering the years of 1998 to 2018 of the literature published in Portuguese and English language of the proposed theme.

It should be emphasized that the choice of the aforementioned databases for this research was because they present reliability and prestige in the technical-scientific environment and because they cover health and education areas.

Thus, considering the goal of the research, the Health Sciences descriptors, the terms of the Medical Subject Headings (MeSH) of the National Library of Medicine, the descriptors of the Thesaurus of the ERIC database and the free terms (keywords) that were crossed among them with the use of the Boolean operators AND and OR were established.

The surveys on the databases obeyed the following search order: 1. ERIC; 2. PubMed; 3. Regional Portal da BVS; 4. Scopus and 5. Web of Science.

Figure 1, below, presents the strategies with the surveys specificities, the descriptors, and the keywords used.

Database	Research Specificities	Free terms /Keywords	Descriptors
ERIC	For the survey with the free terms / keywords, the option "Collection", "Peer reviewed only" and "Full text available on ERIC" were selected. For the search with the descriptors, the "Thesaurus" option was used.	intervention protocol OR educational framework AND autism	educational counseling OR curriculum adaptation AND autism
PubMed	For the survey with the free terms / keywords, the "All fields" option was used. For the search with the descriptors, the "MeSH Terms" option was used.	((educational framework) OR (curricula AND teaching method)) AND autism)	(autism spectrum disorder[MeSH Terms]) AND (((curriculum[MeSH Terms]) AND teaching[MeSH Terms]) AND models, educational[MeSH Terms])
Portal Regional da BVS	The "Title, abstract and subject" option in the advanced search field was used for the survey.	autismo OR Transtorno do Espectro Autista AND protocolo de intervenção escolar OR protocolo de intervenção AND currículo	Transtorno do Espectro Autista AND currículo
Scopus	The "Title, abstract and Keywords" option was used for the survey.	autism spectrum disorder AND curricula AND adaptation	*
Web of Science	The "topic" option was used for the search.	Autism Spectrum Disorder AND curricula AND intervention protocol	*

Note: * - the databases do not present a list of descriptors and therefore the surveys were not carried out.

Figure 1. Database Search Strategies

The total results found by databases are shown in Figure 2.

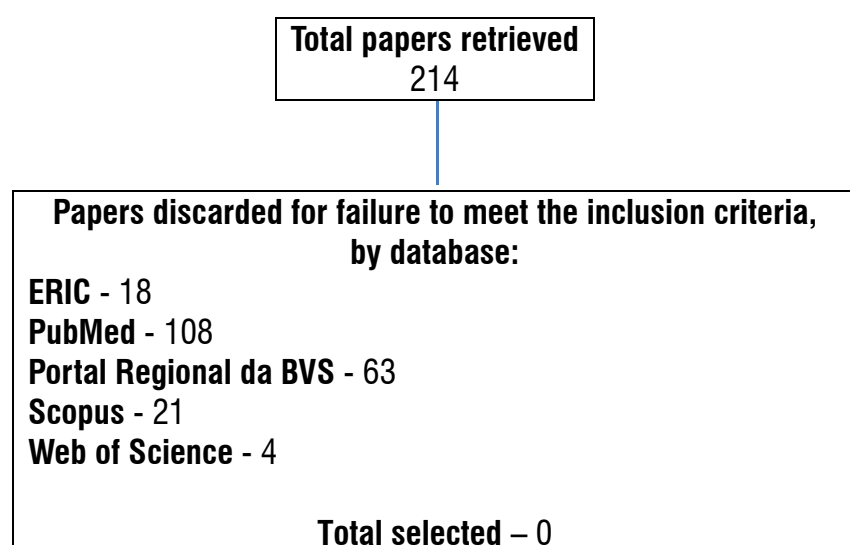


Figure 2. Flowchart of the analysis of papers retrieved in the databases, according to the inclusion criteria

As shown in Figure 2, 214 papers were retrieved in the different databases and after verifying whether or not the studies met the inclusion criteria proposed for the research, all papers were excluded.

LITERATURE REVIEW

The integrative review of the last 20 years on the theme of this study in the databases chosen for this research showed, with the application of the inclusion criteria, the lack of scientific papers on school curricular intervention protocols, which favor the linguistic aspects, translated and cross-culturally adapted to Brazilian Portuguese for the teaching of individuals with ASD.

Considering the 214 papers retrieved from the databases, none met the three pre-established inclusion criteria. However, a descriptive qualitative analysis of four school curricular intervention protocols directed to students with ASD found in the databases surveys, which approximates to the chosen inclusion criteria, is made. It is noteworthy that, despite this description, the studies were discarded from this research because they did not meet concomitantly the three inclusion criteria proposed.

Regarding the four studies on school curricular intervention protocols, the first one was about the application of the Accessible Literacy Learning¹⁰ (ALL) in the teaching of phonemes for eight individuals, from eleven to sixteen years old, with the diagnosis of ASD, Rett Syndrome, Down syndrome, cerebral palsy and intellectual disability. The results pointed to a moderate evidence of the functional relationship between the use of this curriculum and the participants' progress concerning to phonemes learning.

Dixon et al. (2017) described the feasibility of Promoting the Emergency of Advanced Knowledge¹¹ (PEAK) in the teaching of complex verbal operators for three children with ASD. After the PEAK application, the results indicated that each participant successfully acquired the directly trained behaviors and demonstrated generalization for the non-reinforced test samples.

Two studies presented proposals that were closer to the objective of this study, although they were not cross-culturally adapted to Brazil.

Young et al. (2015) applied the Comprehensive Autism Program¹² (CAP) in the teaching of apprentices, from three to five years of age, diagnosed with ASD. The study had the participation of 84 teachers and 302 students with ASD and their parents. The results

revealed that CAP had small positive impacts on students' receptive language and their abilities.

Another study analyzed the application of the Preschool Inventory of Repertoires for Kindergarten¹³ (PIRK) in the teaching of apprentices with ASD in two distinct stages. The first one referred to the application of PIRK as a curriculum for special education schools and if this instrument could have an impact on the development of learners with ASD. The second stage aimed to investigate the ability of children to move from special schools to regular schools. The results from the first stage pointed to an increase in school development of both groups that participated in the research, however, the children who received the PIRK curriculum had better results in areas such as behavior management and social integration skills. The results from the second stage suggest that children who previously received PIRK, to attend regular schools, showed improvements in communication, socialization, and daily life skills.

The other studies found, discarding those that did not correspond to the school aspect, were, in large part, about teaching strategies and/or curricular adaptations directed to parents and caregivers of children with ASD.

Considering the current reality of educational policies for inclusion in Brazil, as well as the reality of Brazilian public schools, as pointed by the INEP Census in 2016, this finding reveals a gap in the qualitative aspects of Brazilian basic education⁷⁻⁹, despite achievements regarding the school inclusion of individuals with SN¹⁻³ guaranteed by national legislation^{4,5,14-19}.

The requirement for the inclusion of individuals with NE as recommended in the documents and laws¹⁶⁻¹⁹ that guide national basic education, especially those with ASD, presuppose, theoretically and practically, that teachers and schools will be provided with strategies, materials and instruments that can promote the educational development of these learners^{18,19}.

In this sense, the use of school curricular intervention protocols can make feasible and allow a more inclusive practice from teachers and collaborate in improving the qualitative aspects of basic education in the country, especially considering the specific characteristics⁹ of learning, in this case those regarding language, individuals with TEA.

Being language an essential element of human development and impaired in individuals with ASD, it is imperative that this aspect be stimulated and be part of the learner's school activities.

In the international scenario, there is a school curricular intervention protocol called Collaborative Model for Promoting Competence and Success for Students with Autism Spectrum Disorder (COMPASS)²⁰ which is also directed to favor and to develop the linguistic aspects of the ASD student.

The above-mentioned protocol developed by Ruble et al., of the Kentucky University in the United States, has been used in American school contexts, benefiting ASD students' academic and linguistic development²¹⁻²³.

Because it is scientifically tested, systematized and based on evidence¹⁶, and because it considers the characteristics of the ASD apprentice for the development of curricular interventions that allow the development of this student, in linguistic and social areas, based on the school curriculum²¹⁻²³, COMPASS can assist Brazilian teachers in their practices.

Nowadays, the translation and cross-cultural adaptation of COMPASS²⁰ to Brazilian Portuguese are being conducted in order to make this instrument available to teachers of basic education in Brazil.

CONCLUSION

An integrative review of the literature on school curricular intervention protocols, which favor the linguistic aspects, for ASD students was carried out.

The absence of these protocols in the investigated scenario, that can interfere in the quality of inclusive education in Brazil, was verified.

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