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Children's Social Representations on vaccination: Contributions to Health Education

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ABSTRACT

In recent years, the media has been reporting situations in which families have stopped vaccinating their children, a fact motivated by beliefs that consider immunization unsafe or dispensable. Regarding the educational process, science education in the early grades of elementary education plays a prominent role in promoting health education, particularly regarding the importance of vaccination and the dangers of lack of immunization. A way to understand what is happening and indicate how to improve this situation is to investigate individuals' conceptions and social representations (SR) regarding vaccination. Therefore, this study presents the partial results of an investigation on the SR of children from the early grades of Brazilian Basic Education (grade 5) on vaccination, which data were obtained through the Free Word Evocation Technique to indicate contributions to educational proposals in science education. Data were collected with inducing terms "vaccination" and "the importance of being vaccinated". It was identified that students associated vaccination essentially with fear and pain, indicating the need for discussion on the topic and its importance in the school context. On the other hand, the data showed that despite this, students understand the importance of immunization, associating it with health and disease prevention. There is a need to promote actions that enable a new school culture on the immunization process, which is so relevant, highlighting its benefits in individual and collective health.

KEYWORDS: Science education. Diseases. Vaccine. Scientific controversies.

1 INTRODUCTION

With the demographic explosion in the world and the concentration of people in large urban centers, health problems have intensified due to the occurrence of infectious diseases, where social factors such as precarious physical conditions in some places, lack of public investment, and deficiencies in education, contribute to worsening individual and collective health (CRUZ *et al*., 2017).

Vaccination aims to immunize a person against a specific disease. Vaccination is considered one of the best actions in controlling and eradicating infectious diseases and one of the most cost-effective procedures in health (FIGUEIREDO *et al*., 2011). Vaccination directly protects individuals and the community by reducing or eliminating the infectious agent in the environment (BARBIERI; COUTO; AITH, 2017). Furthermore, childhood vaccination, especially in the first year of life, is crucial in reducing infant mortality rates (SANTOS *et al*., 2011).

However, the success of vaccination campaigns depends heavily on the acceptance and understanding of families/caregivers. Cases of parents refusing to vaccinate their children have been recorded in Brazil, the United States, and Europe. Regarding Brazilian data, the disclosure made by the Ministry of Health in 2020 shows that none of the vaccination coverage targets available through the PNI (National Immunization Program) were met (AGUIAR, 2020). 'Seven of the nine vaccines indicated for babies had in 2019 the worst coverage rates since at least 2013 in the country' (CAMBRICOLI, 2020, online).

According to an article published by Modelli (2018), diseases considered eradicated in Brazil, such as measles and poliomyelitis, reappeared in the national territory in 2018. Despite the non-adherence of some Brazilian families to the childhood immunization campaign, the legislation considers that 'vaccination of children is mandatory in cases recommended by health authorities' (BRAZIL, 1990, s/p.).

This movement has been accentuated even more with the advent of social media and the dissemination of so-called 'fake news' (a term attributed to false news spread through the Internet), which daily stimulates the propagation of false news and information about numerous themes, especially about health and vaccination. Saraiva and Faria (2019, p. 2) explain that:

> [...] fake news has affected the most diverse areas of individuals' lives, from politics to public health. Recently, false news about polio and triple viral vaccines and their supposed relationship with autism gave strength to anti-vaccination campaigns, where parents of newborns claimed to refuse to vaccinate their children. The proportion of occurrences was so great that it triggered the reappearance of diseases already eradicated, recording cases in Europe, the United States, and Brazil.

The Brazilian Ministry of Health has already pointed out that disseminating false news implies a decrease in the number of immunized individuals in the country. Therefore, information based on the scientific universe must be increasingly disseminated, especially in educational institutions.

Regarding the educational process, science education in the initial years of the Brazilian “Fundamental Education” assumes a primary function in the rise of health education, especially the importance of vaccination and the dangers of lack of immunization. This issue was already presented in the National Curriculum

Parameters (NCP) as a learning objective for 4th and 5th-grade students to understand the importance of natural and stimulated defenses (vaccines) of the body (BRAZIL, 1997, p. 58).

When the NCP refers to the contents for the Natural Sciences discipline, for the thematic block 'human being and health', it is highlighted that:

> [...] it is possible to deal with the immune system as a natural defense of the organism, which can be stimulated by vaccines, against the action of foreign elements. The variety of vaccines, their correct use, forms of action, and the importance of vaccination campaigns can be investigated through interviews with health agents in local health posts.
>
> [...] establishing relationships between body health and the existence of natural and stimulated defenses (vaccines) (BRAZIL, 1997, p. 64-66).

This concern in science education is also reinforced by the National Common Curricular Base (BNCC), attributing that by the end of Elementary Education, it is expected that students will be able to understand the role of the State and public policies, especially vaccination campaigns, family and community health care programs, investment in research, awareness campaigns on diseases and vectors, among others, that is, important aspects in health education (BRAZIL, 2017).

Despite the mandatory vaccination of minors and education's duty to emphasize its importance in the initial and final years of Elementary Education, the decline in vaccination rates alerts us to this problem, mainly regarding serious diseases that put the community at risk.

To understand what is happening and indicate paths to improve this situation, we resort to the theory of Social Representations (SR) to investigate the common-sense knowledge of a social group regarding vaccination. This theory constitutes a "particular mode of knowledge that has the purpose of elaborating behaviors and communication between individuals" (MOSCOVICI, 1978, p. 26). In this sense, SR guides the individual-group/object relationships, *i.e.*, people's relationships with the world, guiding behaviors and communication conducts. Considering the seriousness of public health problems and the need for health education plans that can be applied in science education, this study aimed to investigate the social representations of children in the initial years (5th grade) of Basic Education regarding vaccination and provide contributions for educational proposals in science education.

The choice of this age group is based on Moscovici's (2003) understanding that young children already have contact with SR and are experiencing social phenomena, just like adults, making them an adequate group for this study. Being part of the community, we understand the importance of children as "active agents in society, who build their own representations and, at the same time, contribute to the production of the adult world" (NOVA, 2014, p. 6). According to this author, when belonging to the same social group, children can conceive relevant information about the context in which they are inserted and the elements that compose their subjectivity.

2 THEORETICAL ASSUMPTIONS

2.1 Social Representations Theory

Social Representations Theory (SRT) was proposed in 1961 by psychologist Serge Moscovici, who sought to understand how information received by individuals is modified and how it contributes to forming and maintaining their social reality (MARQUES, 2016). SRT presents itself as a form of knowledge constituted by a social group to understand an object and was formulated from the analysis of collectivity, whose objective is based on the intention of understanding how everyday knowledge impacts the actions and behavior of participants (MOSCOVICI, 1978, p. 28):

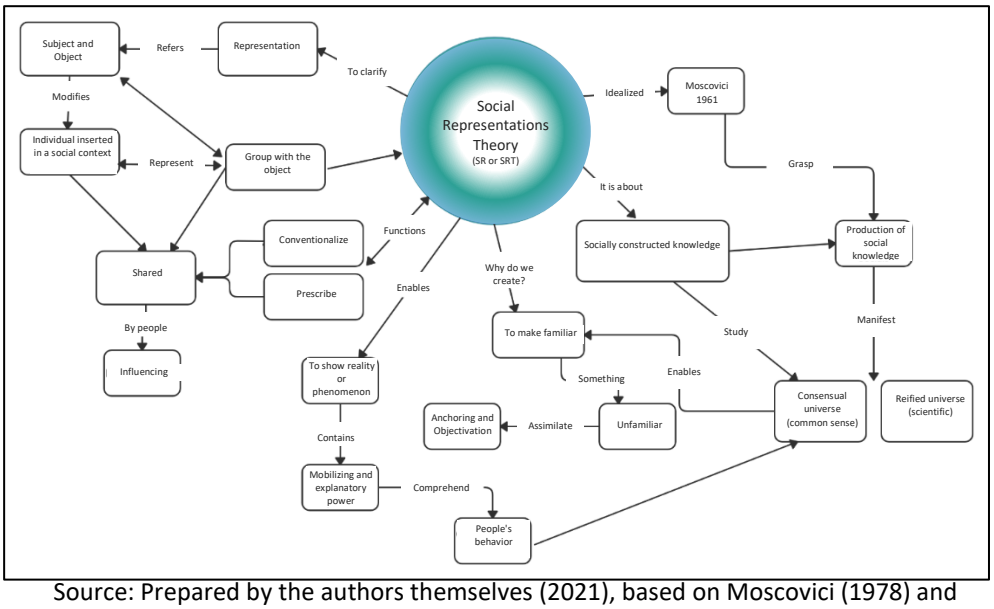
> [...] social representation is an organized corpus of knowledge and one of the psychic activities thanks to which men make physical and social reality intelligible, insert themselves into a group or a daily relationship of exchanges, and release the power of their imagination.

When dealing with SRT, it is essential to attribute meaning to the term representation. Moscovici (1978) explains that a representation has two inseparable aspects: the figurative and the symbolic. Thus, a mental representation constitutes itself as an image and meaning, as Jodelet (2016, p. 23) presents, where "every image is equated with an idea and every idea with an image, enabling the subject to produce certain knowledge about the world through the act of representing". For this author, and assuming Moscovici's perspective, representation always refers to something attributed to a subject so that the representation of an object is driven by a movement of "thinking and rethinking" (JODELET, 2016, p. 24). However, this process becomes complicated when the subject is situated in a social context whose representation of objects shares inherent traits of this context. Therefore, a representation can translate, beyond the relationship between subject and object, as well as the relationships shared by social groups. Mazzotti (2002, p. 17) also explains this relationship based on Moscovici's ideas:

> [...] subject and object are not functionally distinct; they form an inseparable set. This means that an object does not exist by itself but only about a subject (individual or group); the subject-object relationship determines the object itself. When forming its representation of an object, the subject, in a way, constitutes it and reconstructs it in its cognitive system in order to adapt it to its value systems, which, in turn, depend on its history and the social and ideological context in which it is inserted.

The concept of social representation assumes a more dynamic character, referring both to the process by which representations are conceived and to the structure of knowledge defined (MOSCOVICI, 2003). Social Representations Theory (SRT) aims to understand these inter-relations under various aspects of physical, social, cultural, and cognitive reality, characterizing itself as "a form of knowledge, socially elaborated and shared, with a practical objective, and which contributes to the construction of a common reality for a social group [...] designated as common sense knowledge" (JODELET, 2001, p. 22). Figure 1 illustrates how Social Representations (SR) are constituted and organized.

Figure 1: Conceptual Map referring to Social Representations Theory



Source: Prepared by the authors themselves (2021), based on Moscovici (1978) and Jodelet (2001).

In this sense, shared knowledge is also relevant to learning development. According to Magalhães Júnior (2018), knowledge from common sense and previous or alternative knowledge brought to school by students can constitute obstacles to learning scientific knowledge. However, according to the same author, it is essential to understand that not all previous knowledge constitutes a social representation since individual experiences not shared by others are not configured as SR.

Moscovici (2015) differentiates knowledge into two universes: consensual and reified. The consensual universe characterizes knowledge produced in social relationships, understood as common sense or naive knowledge, responsible for composing SR. In contrast, the reified universe originates from knowledge produced with scientific rigor, interpreted by science (SÁ, 1993). Thus, "we can understand the existence of scientific knowledge from the reified universe, as well as common sense knowledge that emerges in the consensual universe" (ORTIZ, 2019, p. 4).

Despite SR not being derived from scientific knowledge, its study is just as genuine, given its importance in the social context of individuals. Its study directs us to understand the constitution of opinions, attitudes, and shared thoughts in various contexts of dialogues, interactions, and information.

2.2 The Central Nucleus of a Social Representation

The theory of SR, originating from Moscovici (1978), has been developed in four main branches (ORTIZ; TRIANI; MAGALHÃES JÚNIOR, 2021): the Cultural/Anthropological Sociogenetic; the Societal/Sociodynamic; the Dialogical; and the Structuralist. In this study, we adopt the latter branch as a theoretical-methodological contribution to the field of SR.

The structuralist branch, developed in the 1970s, "was elaborated from the hypothesis that suggests that every representation [...] is organized in such a way

that, at its center, are the elements that give meaning to this social representation" (MACHADO; SIQUEIRA, 2018, p. 87). In this way, the structuralist approach presents components for understanding and explaining how to acquire and transform SRs (PULLIN; PRYJMA, 2011).

By proposing this theory, Abric (2000) assumes that a representation consists of a set of information, beliefs, attitudes, and opinions about a specific social object, organized in a structure that deals with the cognitive aspects of an SR that are structured around a Central Nucleus (CN) and a peripheral system. The knowledge contained in a social representation is not enough to characterize it; however, it is essential to define its CN (MARQUES, 2016), which consists of an "imaginary structure in which the elements of the object of representation selected by individuals or groups are articulated, based on normative and cultural criteria" (LIMA, 2009, p. 101).

The CN "is the common social and collective basis that defines the homogeneity of a group, through its individualized behaviors that may seem contradictory" (ABRIC, 1998, p. 33). These behaviors and values that make up the CN are those that the individual is not explicitly aware of, yet they guide their actions and determine their behavior (FERREIRA *et al*., 2005).

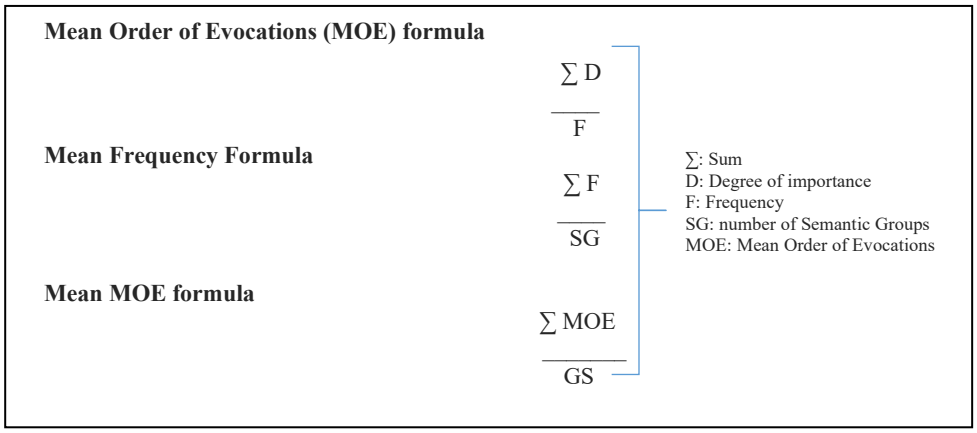
The elements that constitute the common basis of SR come from collective memory and relate to the shared historical-social conditions of the group. The CN of SR is relatively insensitive to changes, being very stable and permanent; in contrast, the periphery (subdivided into the first periphery, the contrast zone, and the second periphery) is more flexible and presents the characteristics of the individuals' immediate reality and their individual characteristics. The periphery provides anchorage to reality and in cases of modifications of social perceptions, terms belonging to the peripheral zone may occasionally migrate to the CN, altering this representation (MARQUES, 2016). The periphery acts, therefore, as a protection zone for the CN against external circumstances experienced by individuals and, consequently, the transformation of SR.

These properties that differentiate the CN and the periphery relate to qualitative elements, such as symbolic value (significance) and associative power (polysemy), and quantitative aspects, such as salience (frequency and hierarchy of evocation) and connectivity (associative capacity) (BORTOLAI *et al*., 2019). Thus, to determine the composition of the CN of SR, it is essential to consider some factors:

> [...] the frequency with which a term is evoked by individuals, as well as its hierarchy by the promptness of evocation; the relationship between these variables allows the calculation of the Mean Order of Evocation (MOE). Thus, the MOE represents the relevance of the terms for the group, expressed by the lower values attributed to the hierarchy of evocations (BORTOLAI *et al*., 2019, p. 169).

Therefore, to determine the MOE from the theoretical-methodological approach proposed by Abric (2000), we use the sum of the degree of importance the respondents attributed to a certain semantic group or word, divided by the frequency (sum of times) with which the word was evoked. In addition to the organization of the semantic groups, it is necessary to define the mean of the frequencies and the mean of the MOE. These data are necessary for determining the quadrants and identifying the Central Nucleus (CN) and periphery of the SR (Figure 2), as established by Galvão and Magalhães Júnior (2016, p. 128).

Figure 2: Formulas used for identifying the central, intermediate, and peripheral elements of representations through the free evocation of words technique



Source: Galvão e Magalhães Júnior (2016, p. 128).

Figure 2 presents the mathematical models for obtaining the quantitative properties and salience, which make up the "Four Houses Frame" or "Vergès Diagram" (SÁ, 1996).

3 METHODOLOGICAL APPROACH

For the study of Social Representations (SR) about vaccination, students from the urban area of a municipal school in the Northwest of Paraná, Brazil, were chosen. The sample of 17 students from the 5th grade of Elementary Education consisted of 10 girls and 7 boys aged between 9 and 12 years, considering them already able to communicate in writing with adults, and, as Nova (2014, p. 6) states, "we understand the value of the child as a social subject - since they interact with people, with institutions, react to adults, and develop strategies to participate in the social world".

To identify the Social Representations (SR), we adopted the free word evocation technique (SÁ, 2000), based on the inducing terms "Vaccination" and "Importance of Being Vaccinated", according to the model proposed by Carmo, Leite, and Magalhães Junior (2017). To conduct the research, we asked the students to write the first five words that came to their minds and then rank them from one to five, with the first being the most relevant and the fifth being the least relevant. This process allows the participant to reorganize and reevaluate the order in which they wrote the terms they initially thought of (ROCHA, 2009). Finally, the students were invited to write a textual justification for each evoked word. We denoted the students' responses to the inducing term "Vaccination" as "A" and their responses to the inducing term "Importance of Being Vaccinated" as "B".

After data collection, the evoked terms were organized in spreadsheets and divided into semantic groups. The words evoked only once, and that did not fit into any group were eliminated, as they were not considered important about to the group's representativeness (FERREIRA *et al.*, 2005). To identify the Central Nucleus (CN) and periphery, we performed a prototypical analysis to recognize salience.

To understand the relationships between the terms (associative power), we conducted a similarity analysis using the Iramuteq program. This software

recognizes the co-occurrence values of the terms evoked by the social group surveyed (5th-grade students), associating frequency (f) and co-occurrence of words, conceiving a graph called a similarity tree. This graph presents a set of connections between the evoked terms and disposed in the CN based on their associative capacity (BARTOLAI *et al*., 2019).

Bartolai and collaborators (2019) state that the maximum similarity tree exhibits vertices and edges that interconnect them. The circular images represent the vertices whose radius illustrates the frequency of each evoked term. The larger the frequency of the evoked term, the larger the vertex (radius). The connection between the terms is demonstrated by the edges, indicating the co-occurrence value, i.e., the number of times the respondents mentioned two terms together (the thicker the edges, the greater the correlation between the terms).

The association of salience (prototypical) and similarity analyses enables understanding the terms that present the greatest symbolic value for the surveyed social group and "these meanings, in turn, express the polysemic character of the terms, which can have different meanings in different SR, due to the psychological, political, historical, cultural, or social nature to which the message content is associated" (BORTOLAI *et al*., 2019, p. 171).

4 RESULTS AND DISCUSSION

From the analysis of the students' evocations based on both proposed terms, 83 words were recorded for the inducing term "Vaccination" and 81 words for the inducing term "Importance of Being Vaccinated". For the first term, one student recorded only three words; for the second term, three students described several words lower than expected (two students evoked four words and one student evoked three).

The words evoked by the students were organized into semantic groups. The combination of the 63 words for the term "vaccination" generated 16 groups, with a Mean Order of Evocation (MOE) of 2.96 and a mean Frequency (F) of 4.12. Words with a frequency of one were discarded, as suggested by Ferreira *et al*. (2005).

Using these values, the Vergès Diagram was elaborated, presenting the four quadrants with the respective groups that comprise the Social Representations (Table 1).

Table 1 - Elements of the Social Representations of 5th-grade students regarding the inducing term"Vaccination"

Central Elements – 1st quadrant **High F & low MOE** **F≥ 4,12 & MOE< 2,96**			**Intermediate Elements – 2nd quadrant** **High F & high MOE** **F≥4,12 & MOE≥ 2,96**		
Word	**F**	**MOE**	**Word**	**F**	**MOE**
Fear	11	1,90	Needle	7	3,57
Pain	9	2,77	Medicine	7	3,00
			Disease	5	3,40

Intermediate Elements – 3rd quadrant Low F & low MOE F< 4,12 & MOE<2,96			Peripheral Elements – 4th quadrant Low F & high MOE F<4,12 & MOE≥ 2,96		
Word	**F**	**MOE**	**Word**	**F**	**MOE**
Syringe	3	2,66	Hospital	2	3,00
Injection	2	2,50	Bad	2	4,50
Prevention	4	1,75	Crying	2	4,50
Patient	2	1,00			
Doctor	3	2,33			
Shame	2	2,50			

Source: Authors (2021).

In the upper left quadrant (1st Quadrant), it can be perceived that the two groups of words possibly represent the central elements of the SR, as they are more frequent and quickly evoked (SÁ, 1996). By grouping semantically, we represent "Fear" as the various words that integrated the students' feelings regarding vaccination. This group obtained the highest number of evocations, with a frequency of 11 and an MOE of 1.90. The group "Pain" presented a frequency of 9 and MOE was 2.77, which is also a possible nuclear element.

This greater representativeness can be interpreted by the students' memories regarding vaccination moments. In their interpretations of the term "fear", the words are associated with the sensation of being vaccinated: "I'm afraid because it seems to burn your skin" (A09); "Because it gives a strange reaction" (A13); "Because I think it's painful" (A15); "Because when I get an injection in my arm, I feel pain" (A07). In other dialogues, fear is associated with the use of needles and injections in the process: "Because when I enter the consultation room, there are many injections" (A07).

In the students' explanations for the term "pain", the following excerpts were found: "Trauma because when I was little, I took a vaccine that hurt for 3 to 4 days" (A16); "I'm afraid it will hurt, every time I go to get vaccinated, the doctor tells me to close my eyes, that it won't hurt, but I imagine everything and, in my imagination, it hurts a lot, that's why it hurts" (A01).

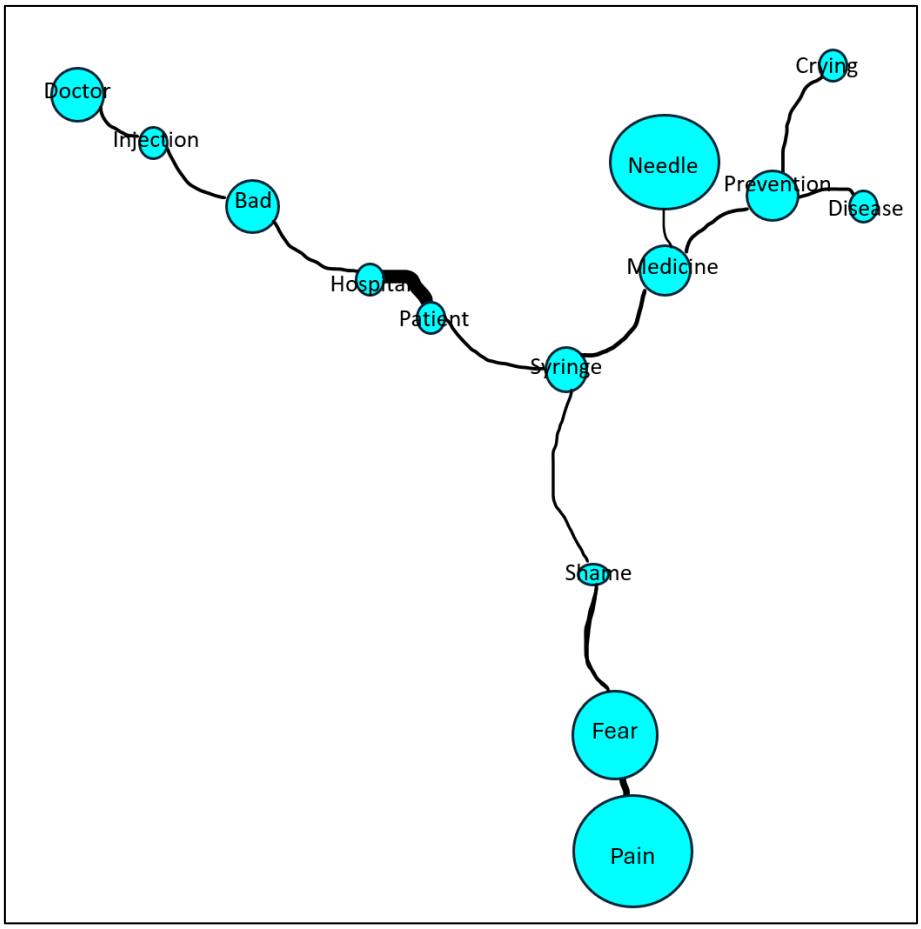
The justifications presented by these students lead us to consider that they associate the vaccination process with a traumatic moment involved in anxiety. According to Taddio *et al*. (2009), pain during vaccination causes feelings of suffering and panic, which are potentiated by the fear of needles, contributing to the non-acceptance of vaccination. The child responds anticipatorily with anxiety and panic, which can potentiate suffering regarding the immunization act.

The report by Wirth (2018), based on a study conducted by American researchers, indicates that there is a strong relationship between anticipated fear and parental behavior regarding vaccination, which influences children's behavior, as some children exhibit intense fear long before the needles and the process, even before receiving the injection. If not well addressed in childhood, this characteristic can contribute to non-vaccination in adulthood (WIRTH, 2018).

For this reason, in addition to family participation, schools and science education can guide students in understanding the importance of the vaccination process, leading to scientific literacy that promotes an understanding of its social importance. By providing scientific education on vaccines, students can understand their importance for individual and collective health, which helps dispel fears and myths about pain and adverse effects.

To verify the centrality of the CN elements, we used the Iramuteq software, where we submitted the data to similarity analysis, whose maximum tree can be visualized in Figure 3. This analysis helps to provide convergent results that can reinforce the existence of the nucleus from the point of view of validating our hypothesis" (ABRIC, 2000, p. 31). Furthermore, according to Sá (2002, p. 126), Similarity Analysis is the "main technique for detecting the degree of connectivity of the various elements of a representation".

Figure 3 - Maximum similarity tree of 5th-grade students regarding the inducing term "Vaccination"



Source: Authors (2021).

In this analysis, it is verified that students' social thought suggests the centrality of the element "Fear", from which other elements branch out, with the closest connectivity occurring with the elements "Pain" and "Shame". The elements "syringe", "prevention", and "medicine" also manifest centrality. However, the "syringe" element stands out as a link related to three other blocks. The element "pain", despite presenting high frequency and manifesting in the

prototypical analysis' CN, does not manifest centrality (FLAMENT, 1981; VERGÉS, 2002).

Based on both analyses, it can be understood that the representation of this social group is concentrated, in particular, around the "fear" of vaccination. This data corroborates a study conducted by the São Leopoldo Mandic Faculty in partnership with the London School of Hygiene and Tropical Medicine, where a large part of the respondents stated that they were afraid of getting vaccinated (CENTAMORI, 2019). The fear of vaccination in adolescents was also evidenced in the work of Nogueira da Silva *et al*. (2021), having a relation with the injection, pain, needle, and fear of reaction.

Regarding the analysis of the words evoked by the students, relative to the term "Importance of being vaccinated", the semantic arrangement resulted in the formation of 14 groups. The mean frequency (F) was 4.50, and the mean order of evocation (MOE) was 2.83, resulting in Table 2.

The organization of words evoked by the students made it possible to classify the groups "Health", "Prevention", and "Not getting sick" as possibly being the nuclear integrant, with the third having the highest evocation and the first being the most promptly evoked, according to its low MOE.

Table 2 - Elements of the Social Representations of 5th-grade students regarding the inducing term "Importance of being vaccinated"

Central Elements – 1st quadrant **High F & low MOE** **F≥4,50 & MOE< 2,83**			**Intermediate Elements – 2nd quadrant** **High F & high MOE** **F≥4,50 & MOE≥ 2,83**		
Word	**F**	**MOE**	**Word**	**F**	**MOE**
Health	8	2,00	Diseases	6	3,33
Prevention	5	2,60	Types of illness	7	4,14
Not getting sick	10	2,60			
Intermediate Elements – 3rd quadrant **Low F & low MOE** **F< 4,50 & MOE<2,83**			**Peripheral Elements – 4th quadrante** **Low F & high MOE** **F<4,50 & MOE≥ 2,83**		
Word	**F**	**MOE**	**Word**	**F**	**MOE**
Life	3	2,33	Joy	3	3,00
Application	6	2,00	Recommendations	3	4,00
Doctor	2	2,50	Medicine	2	3,50

Source: Authors (2021).

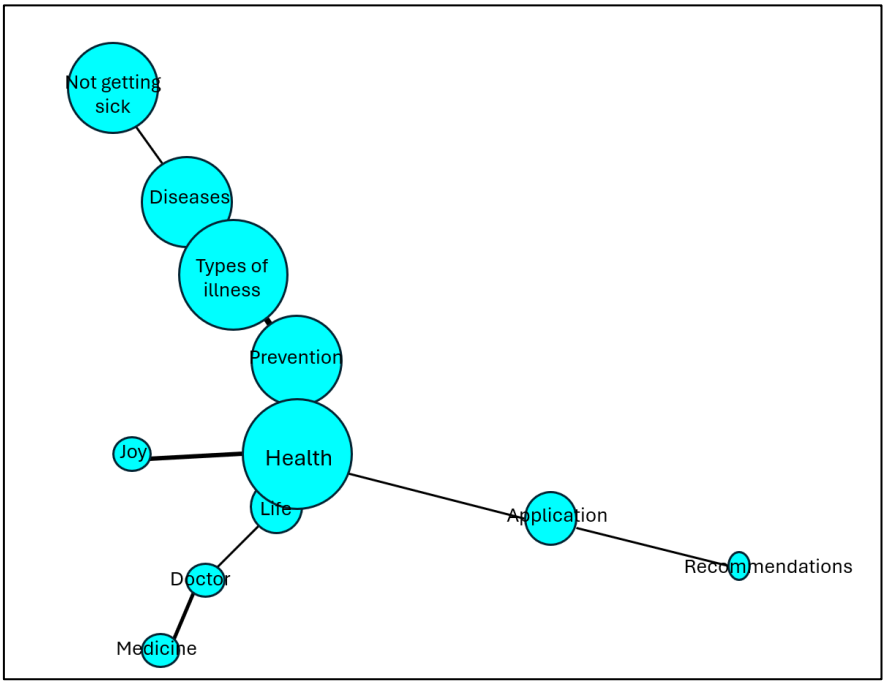
Regarding the nuclear element "Health", which presented a frequency of 8 and an MOE of 2.00, it is perceived through the descriptions that the students emphasize the importance of being vaccinated as a prerequisite for maintaining health: "getting vaccinated to take care of health" (B5); "whenever you are vaccinated, you become healthy" (B11); "having a life with health and well-being" (B15).

The answers B1, B5, B13, B15, and B17, representing the semantic group "Prevention", refer to vaccination as an instrument to avoid diseases. The word presented a frequency of 5 and a mean order of evocation of 2.60.

The group "Not getting sick", with the highest frequency among the others, was evoked by ten of the seventeen students and presented an MOE of 2.60, reinforcing the idea of immunization for the purpose of not getting sick. The students' interpretations emphasize: "you always have to take care of yourself not to get sick" (B8); "you have to get vaccinated to not have spots or symptoms" (B10); "not being in bed or being able to go to school" (B3). Another student notes that "the vaccine is so you don't get the flu" (B7), correlating the vaccine with preventing a specific disease.

Figure 4 presents the Maximum Similarity Tree for the term "The importance of being vaccinated". In the case of this semantic group, all the elements identified earlier as possible representatives of the CN of the SR (Table 3) are among those with the highest connectivity. This result reinforces the possibility that these are nuclear elements of the social representation.

Figure 4 - Maximum similarity tree of 5th-grade students regarding the inducing term "Importance of being vaccinated"



Source: Authors (2021).

The analysis of both semantic groups reinforces the idea that students understand the immunization process as an important element for protecting health. However, the results refer to an association of this process with the fear of being vaccinated. In light of this scenario, education as a promoter of health can contribute to minimizing these feelings insofar as:

> [...] education leads to better levels of health and well-being through the dissemination of knowledge about hygiene and disease prevention methods. Promoting health education is an important means of enabling children to put into practice the health protection measures they learn in the classroom. Furthermore, children become important health agents when they

> disseminate what they have learned in school to their family environment (SUCCI; WICKBOLD; SUCCI, 2005, p. 75).

When comparing the analysis of the semantic groups, it is verified that the students associated vaccination essentially with fear and pain (see Table 1), indicating the need for discussion on the topic and its importance in the school context. On the other hand, the data also demonstrated that despite attributing the vaccination process to fear and pain, the students understand the importance of the immunization process (see Table 3), associating it with health, prevention, and not getting sick.

In fact, the old NCPs and the BNCC of the Science discipline already highlight the relevance of teaching this discipline for promoting health and even bring specific objectives and content that aim at the importance of immunization by vaccines for individual and collective health (BRASIL, 1997; BRASIL, 2017), which demonstrates that legislative guidelines already act to promote Health Education. In addition to these educational guidelines, it is necessary to promote the expansion of debates that enable a new school culture about the immunization process, highlighting its benefits over the negative feelings observed in the students' manifestation.

Providing students with fundamental knowledge about individual and collective health, public health, and immunization is essential because this learning not only enriches the students' educational base but also enables them to become multipliers of information in their social and family circles, contributing to a more informed society about health and collective issues.

The data listed and analyzed in the light of Social Representation Theory constitute the common reality of this social group. However, despite the global context reporting reduced percentages of vaccinated people in recent years and a trend of families not vaccinating their children motivated by disbelief in the vaccination process, the data presented here do not show that this trend has reached the families of the students surveyed. The importance of vaccination has become even more relevant today after the COVID-19 pandemic, in which vaccination is clearly recognized internationally.

Thus, it is essential to have a continuous clarifying campaign about the immunization process, especially at a time of great misinformation promoted and disseminated through social media. Furthermore, the approximation between health secretariats and educational institutions can contribute to the deconstruction of the culture of "fear" predominant around getting vaccinated.

Although this research was conducted with a small group of children, this factor alone does not threaten the validity of this study. Children carry representations that can perpetuate throughout adult life and be capable of influencing the behavior of a social group. "The collective process itself penetrates, as a determining factor, into individual thought" (MOSCOVICI, 2003, p. 40).

In this sense, Health Education needs to be seen as a fundamental component in basic education, the school phase of the surveyed group, so that it can promote knowledge that allows students to act also as responsible citizens for individual and collective health (CARVALHO; JOURDAN, 2014).

FINAL CONSIDERATIONS

Revisiting the objective of this study, which aimed to investigate the social representations of immunization among elementary school students in a school in northwestern Paraná, the analysis of the data allowed us to understand that the social representation obtained in response to the inducing term "vaccination" is strongly associated with fear, demonstrating the need for broader discussion in the educational environment that comprehends the reasons that lead to the dissemination of negative culture about vaccines that permeates children's representations.

On the other hand, understanding the "importance of being vaccinated" demonstrates that students recognize the relevance of vaccination for health, prevention, and not getting sick, reaffirming the parameters disciplined by science education in the early elementary school years.

In the context of the immunization process, education plays a transformative role, guiding students on the importance of vaccines for individual and collective health. By understanding the foundations and benefits of vaccines, children become multipliers of knowledge and information among their family members and other social group members, combating myths and misconceptions commonly propagated.

This educational action is essential in a global scenario where false news spreads rapidly. Promoting Health Education clarifies doubts and strengthens confidence in public health systems and the vaccination process, encouraging greater adherence to immunization campaigns, a fundamental factor for protecting collective health.

The data indicate the need for broader investigations and discussions regarding the culture of fear that permeates vaccination and teaching strategies in science education, as well as the training of education professionals that can corroborate with the amplitude of immunized citizens.

Furthermore, there should be an expansion of debate that enables a new school culture about vaccination that is so relevant today, highlighting its benefits for individual and collective health over the negative feelings observed in the students' manifestation.

REPRESENTAÇÕES SOCIAIS DE CRIANÇAS SOBRE VACINAÇÃO: SUBSÍDIOS PARA EDUCAÇÃO EM SAÚDE

RESUMO

Nos últimos anos a mídia vem divulgando situações em que famílias deixaram de vacinar seus filhos, fato este motivado por crenças que consideram a imunização insegura ou dispensável. No tocante ao processo educacional, o Ensino de Ciências nas séries iniciais do Ensino Fundamental assume um papel de destaque na promoção da educação para a saúde, em especial, a importância da vacinação e os perigos da falta da imunização. Um método para compreender o que está ocorrendo e indicar caminhos para melhorar esta situação é investigar as concepções e Representações Sociais (RS) que os indivíduos possuem em relação à vacinação. Por isso, o presente estudo objetiva investigar as representações sociais de crianças das séries iniciais (5º ano) da Educação Básica sobre a vacinação, com o intuito de indicar subsídios para propostas educacionais no Ensino de ciências. Os dados foram obtidos por meio da Técnica de Evocação Livre de Palavras, e teve como termos indutores “vacinação” e “a importância de ser vacinado”. Identificou-se que os estudantes associam a vacinação essencialmente ao medo e à dor, indicando a necessidade de discussão sobre o tema e sua importância no contexto escolar. Por outro lado, os dados demonstraram que, apesar disso, os estudantes compreendem a importância do processo de imunização, associando-os à saúde e à prevenção da doença. Conclui-se a necessidade de promoção de ações que possibilitem uma nova cultura escolar sobre a vacinação, tão relevante atualmente, ressaltando seus benefícios em saúde individual e coletiva.

PALAVRAS-CHAVE: Ensino de Ciências. Doenças. Vacina. Controvérsias científicas.

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