Factors related to the "Development Delay" diagnostic proposition among adolescents going to school: transversal study

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ABSTRACT
Problem: The absence of facilitating stimuli in the environment in which the adolescent coexists is usually related to a delay in his development. Objective: To analyze the association of factors related to the "Development Delay" diagnostic proposal among adolescents in the school environment. Method: Transversal study performed with 385 adolescents in a city in Northeastern Brazil. The study was approved by the Ethics in Research Committee of the responsible institution, under opinion nº 1.662.528 and the Certificate of Presentation for Ethical Consideration nº 57945016.4.0000.5537. Outcomes: The prevalence of the diagnostic proposition for delay in development was of 18.26%. Related factors that showed significant statistical association were social marginalization, chronic pain, refusal to accept body changes taking place during puberty and psychological trauma. Discussion: One can perceive the relation between the studied variables and human development when considering the literature available. Conclusion: The knowledge of the associated factors most present in this population facilitates the understanding of the diagnostic proposal by the nurse. Besides, it contributes to the identification of the different aspects capable of causing harm to the adolescent and, consequently sequels in the adult life.

Describers: Nursing; Nursing diagnostic; Adolescent.

INTRODUCTION

An individual's development encompasses growth, maturing and physical, psychological and social aspects of learning [1,2]. It is estimated that all over the world 200 million children are under risk of not reaching their full development. [3].

Adolescence consists of a transition period between childhood and adult life, having as traits somatic, psychological and social changes. It is a period of great importance as it can be influenced by determinant factors and have consequences lasting to the end of life[4].

According to the Dictionary of Developmental Disabilities Terminology (2003), a delay in development is the state in which the child does not acquire the skills expected for his or her respective stages of growth, something usually related to the absence of facilitator stimuli in the environment where the child and the adolescent coexist with others.

The nursing assistance to the adolescent is therefore characterized as a fundamental activity in this scenario, allowing an effective response to the health needs of this group. The follow-up of the development taking place favors the diagnostic process, making it possible to plan the healthcare and to identify, intervene and/or prevent problems related to a developmental delay. [5].

For that purpose, Herdmam e Kamitsuru[6] state that the nurse counts on a methodological tool for the Nursing Process (NP) encompassing five stages: history, nursing diagnostic, planning, implementation and evaluation. The NP contributes to a more directed, effective and efficacious nursing practice.

Among the NP stages, the Nursing Diagnostic (ND) stands out given that, by means of it, the nurse makes a clinical decision on the patient's response to a given stimulus and directs the nursing assistance towards each person's needs [7].

According to NANDA International (NANDA-I), the diagnostic process is set as an essential part of quality assistance by means of a clinical judgement of the way individual, family or community respond to real or potential health problems. This makes the choice of adequate interventions and the evaluation of care to be provided easier [8].

Therefore, in the realm of growth and development, NANDA-I presented only one diagnostic related to this category. However, such ND was excluded from recent editions of the book due to a lack of related research made clear by a low amount

of evidence [6,8].

Given this problem, authors [1,9] performed studies oriented towards a new diagnostic addressing specifically an adolescent's developmental delay. This diagnostic serves as means to direct nursing assistance towards the development of the adolescent, considering widened concepts representing this health condition.

This way, the current study aims at contributing to the scientific advancement of the emerging diagnostic propositions of this category and to analyze the association of factors related to the "Developmental Delay' diagnostic proposal among adolescents in the school environment. For such, the following question was taken as a starting point: is there an association between the related factors and the "Developmental Delay" diagnostic proposal among adolescents attending school?

METHOD

This is a transversal study carried out in elementary and/or secondary education units in a city in Northeastern Brazil. The selection of schools resulted from a draw making use of the *Microsoft Excel* application that led to eight state education institutions, two for each city zone.

The study was carried out based on the proposal made by Swanson *et al.* (2012) which brings together a given number of individuals per investigated clinical indicator. The consideration of 12 clinical indicators for the diagnostic proposal led to the number of 32 individuals for each term analyzed and to an estimated sample of 384 individuals. The estimated value was rounded to a multiple of five, which explains why the final sample is of 385 adolescents.

Inclusion criteria were: Students regularly registered at the selected institutions; adolescents ranging from 10 to 19 years of age. Exclusion criteria were: An altered physical and/or mental state that would make data collection impossible; and being under medical leave or absent from the institution for a reason other than medical during the data collection period.

Data were collected from July to September 2017, making use of a form with sociodemographic and clinical data, as well as of indictors and factors related to the "Developmental Delay" diagnostic proposal.

It must be remarked that the research counted on the support from nursing professors and undergraduate nursing students following the Care and Epidemiological Practices in Health and Nursing (PAESE) guidelines for data collection. Such collaborators were trained in a previous meeting, aiming at standardizing completion of the form and bias mitigation.

Data were organized on *Microsoft Office Excel* spreadsheets and by making

use of the *IBM SPSS Statistc* statistical 20.0 for *Windows* statistical software. Calculations included relative and absolute frequency, mean, median, standard deviation and Kolmogorov-Smirnov normality test, considering a p value<0,05. Subsequently, the statistical association of the factors listed was made by means of Fisher and Chi-square testing.

The research project was sent for appreciation and approval by the Ethics in Research Committee of the accountable institution, being authorized according to opinion nº 1.662.528 and Certificate of Presentation for Ethical Consideration (CAAE) nº 57945016.4.0000.5537.

OUTCOMES

Among the 385 adolescents attending school evaluated, predominance was: Female gender (56,6%), brown skin (55,8%), followers of a religion (95,3%), without a partner (82,9%), with average family income of 1.86 minimum wage for the average maintenance of 4.4 members. The average age bracket of students was of 14.45 years, minimum age being 10 and maximum, 19.

The "Delay in Development Diagnostic Proposal" was present in 70 individuals, corresponding to 18.26% of the total sample. Associated factors present in the diagnosed individuals and their association to the studied diagnostic proposal are demonstrated in Frame 1 below.

Table1 – Distribution of listed factors and statistical link between the "Development Delay Nursing Diagnostic Proposal" and factors related to it. Natal- RN, 2019.

Factors related	Prevalence		Value p
	n	%	
Psychological trauma	168	43,63%	**$0,002^2$**
Social marginalization	155	40,25%	**$0,000^2$**
Chronic pain	96	24,93%	**$0,009^2$**
Non acceptance of bodily changes during puberty	82	21,29%	**$0,000^2$**
Infections	63	16,36%	$0,749^2$
Obstetric or neonatal conditions	61	15,84%	$0,389^2$

Chronic disease	56	14,54%	$0,619^2$
Emotional deprivation	42	10,90%	$0,272^2$
Unfavourable family environment	39	10,12%	$0,176^2$
Obesity	30	7,79%	$0,741^2$
Malnutrition	11	2,85%	$0,677^2$
Exposure to toxic substances	7	1,81%	$0,602^1$
Undesirable effect of therapies	5	1,29%	$0,574^1$
Psychotropic substnce abuse	2	0,51%	$1,000^1$
Permanent physical trauma	1	0,25%	$1,000^1$
Genetic disorders	1	0,25%	$1,000^1$
Brain lesion	0	0	0

Source: Data collected by researcher.

[1]Exact *Fisher* test; [2]Chi-square test.

Related factors displaying significant statistical link with the diagnostic proposal studied were: Social marginalization, chronic pain, non-acceptance of puberty body changes and psychological trauma. It must be remarked that associations were made for 16 among 17 factors related to the proposed ND due to the exclusion of the factor related to "brain lesion", absent from the sample.

DISCUSSION

According to data analysis, the sociodemographic characterization of the population led to findings resembling those found in the literature[10], where the prevalence of brown race, female gender, age group from 13 to 15 years and absence of a partner is identified. However, the education axis differed from that of previous findings, with years of study above those of the majority, varying from 14 to 16 years. The average family income of 1.86 minimum wage (R$ 937.00) corroborates the findings of previous studies [11,12].

Regarding the "Developmental Delay Diagnostic Proposition", a statistically significant correlation was observed among 4 of the 17 related factors, namely: social

marginalization, chronic pain, non-acceptance of body changes from puberty and psychological trauma.

Social marginalization was one of the prevalent factors among the studied adolescents. According to Becker [13] and Maturano [14], this characteristic is represented by the dynamic process of acceptance and insertion of the individual in the social environment (school environment, neighborhood or church) and in the family environment, being present when the individual is exposed to family neglect and emotional and environmental instability. In other words, a context that does not favor development. Thus, the results show that marginalization is one of the causes for developmental delay.

Regarding the chronic pain related factor, studies [15,16] corroborate that it presents itself as an important cause for developmental delay, as it directly affects domains such as quality of life, psychological, neuromotor and sensitive condition. It is noteworthy that the impact of pain intensity and frequency can generate somatic symptoms and limitations in performing activities of daily living, which directly affects the adolescents' school performance.

As for dissatisfaction in relation to body changes, results show that 21.29% of the adolescents experience it. The main difficulty faced by the adolescent is the dissatisfaction generated by either being overweight or underweight, which translates into too much concern with a body that might not fulfill social standards. Most caregivers do not realize that their children have this dissatisfaction. Thus, dissatisfaction with self-image, depending on its degree, can be manifested to a pathological level, therefore compromising the adolescents' health [17].

According to Machado and Sanches [18], this dissatisfaction can harm development in the following way: social isolation, psychiatric disorders, suicidal ideation, impairment of the learning process, alcohol and drug abuse, depreciation of body image and low self-esteem.

A previous study reveals how those going through the adolescence period are particularly prone to psychological trauma, which confirms the findings of the current study, given that the factor related to psychological trauma had the highest prevalence, being present in 168 adolescents from a sample of 385 [18].

In this context, the relationship between the studied variables and the delay in human development is perceived, justifying, in view of the literature, the importance of the "Developmental Delay Nursing Diagnostic Proposal", in the sense of identifying aspects capable of generating losses to the adolescent which might lead to adulthood

sequelae.

CONCLUSION

The prevalence of developmental delay was identified in 18.26% of school adolescents interviewed. The related factors that showed a statistically significant association were social marginalization, chronic pain, non-acceptance of bodily changes from puberty and psychological trauma. The knowledge of the most frequently associated factors in this population facilitates the identification of the presence of the diagnostic proposition, contributes to the nurse's clinical reasoning and qualifies the health care provided to these patients. In addition, it is believed that it is possible to contribute to the insertion of the "Developmental Delay Nursing Diagnosis" into the taxonomy of NANDA International. The importance of further studies in the area is emphasized, in order to consolidate the theme and increase the level of evidence of the studied diagnostic proposal.

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