

FAMILY ENVIRONMENT RESOURCES AND READING PERFORMANCE BY ADOLESCENTS

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ABSTRACT

This study aimed to verify the association between the resources of the family environment and teenage reading. A total of 106 adolescents of both sexes, aged between 11 and 16 years, without learning difficulties, participated in the study. For data collection, a narrative text, a multiple-choice questionnaire about the text and an adapted Family Environment Resources questionnaire were used. Descriptive and inferential analysis was performed using Spearman, Mann-Whitney and Kruskal Wallis correlation tests, with a significance level of 5%. Resources that promote proximal processes and parenting practices contributed to better reading performance. In contrast, the predictable activities category contributed negatively. Thus, the environment and resources influenced the adolescents' reading performance. It is concluded that the elaboration of school measures and public policies is important to strengthen the family-school relationship, expand family resources and make the environment favorable to teaching.

Keywords: reading; school learning; family relations

Recursos del ambiente familiar y rendimiento de lectura en adolescentes

RESUMEN

En este estudio se tuvo como objetivo verificar la asociación entre los recursos del ambiente familiar y la lectura de adolescentes. Participaron 106 adolescentes, de ambos sexos, de 11 a 16 años, sin quejas de dificultades de aprendizaje. Para la recopilación de datos se utilizó un texto narrativo, el cuestionario de múltiple elección sobre el texto y el de Recursos del Ambiente Familiar, adaptado. Se realizó el análisis descriptivo e inferencial por intermedio de las pruebas correlación de Spearman, *Mann-Whitney* y *Kruskal Wallis*, con nivel de significancia del 5%. Los recursos que promueven los procesos proximales y las prácticas parentales contribuyeron al mejor rendimiento de lectura. Por otro lado, la categoría de actividades previsibles contribuyó negativamente. Así, el ambiente y los recursos influenciaron el rendimiento lector de los adolescentes. Se concluye que es importante la elaboración de medidas escolares y de políticas públicas, para fortalecer la relación familia-escuela, ampliar los recursos familiares y tornar el ambiente favorable a la enseñanza.

Palabras clave: lectura; aprendizaje escolar; relaciones familiares

Recursos do ambiente familiar e desempenho de leitura em adolescentes

RESUMO

Este estudo teve como objetivo verificar a associação entre os recursos do ambiente familiar e a leitura de adolescentes. Participaram 106 adolescentes, de ambos os sexos, de 11 a 16 anos, sem queixas de dificuldades de aprendizagem. Para a coleta de dados utilizou-se um texto narrativo, o questionário de múltipla escolha sobre o texto e o de Recursos do Ambiente Familiar, adaptado. Foi realizada a análise descritiva e inferencial por meio dos testes correlação de Spearman, *Mann-Whitney* e *Kruskal Wallis*, com nível de significância de 5%. Os recursos que promovem os processos proximais e as práticas parentais contribuíram para um melhor desempenho de leitura. Em contrapartida, a categoria de atividades previsíveis contribuiu negativamente. Assim, o ambiente e os recursos influenciaram o desempenho leitor dos adolescentes. Conclui-se que é importante a elaboração de medidas escolares e de políticas públicas, para fortalecer a relação família-escuela, ampliar os recursos familiares e tornar o ambiente favorável ao ensino.

Palavras-chave: leitura; aprendizagem escolar; relações familiares

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INTRODUCTION

The act of reading is a complex activity. It involves the recognition of words and text comprehension, where these two components are interconnected. After all, with word recognition, there is no overall text comprehension. Although it seems to be a simple and easy thing to do, reading comprehension involves cognition and perception skills such as the use of spoken and written language, memory, thought organization, and intelligence (Álvarez-Cañizo, Suárez-Coalla, & Cuetos, 2015; Martins & Capellini 2019; Kim, 2020).

Reading is also considered an active and interactive process that takes place between reader and text. Readers also build up a meaning out of a text (seen as combinations of writing, images, diagrams, graphs, and so on). Such meaning was previously codified. The building of a meaning, and the consequent appropriation of information conveyed by writing, seem to contribute towards the fundamental objectives of reading, which depend on the achieved level of comprehension, on the readers' background knowledge on the topic, and on the type of text to be read (Álvarez-Cañizo, Suárez-Coalla, & Cuetos, 2015).

A simple reading model, the Simple View of Reading –SVR (Hoover & Gough, 1990), points out that two skills are necessary for reading: decoding and comprehension. Decoding concerns the relationship between written symbols and sound units, which involves the processing of phonological and orthographical aspects. Thus, children and adolescents that employ the processing of both aspects present more accuracy in the reading of words (regular, irregular, and pseudowords) and faster reading time. Lexical accessibility gets faster and the reading process becomes automatic. As children advance in their school years, the time they take to read things gets shorter, and the process consequently prompter, which contributes to increase accuracy in the decoding of words (Catts, Adolf, & Weismer, 2006).

Regarding reading comprehension, it can be inferential, which is comprehension at a deeper level. It demands that readers be able to make the necessary inferences in order to make sense out of a text. Reading comprehension might also be literal, which involves overt information in the text to be read, and consists of locating and identifying text elements in details such as main ideas, cause and effect relations, and character traits (Viana, Cadime, Santos, Brandão, & Ribeiro, 2017).

Some factors, intrinsic and extrinsic, might interfere negatively or positively in the reading acquisition, development, and comprehension. Among intrinsic factors, cognitive, mental, and biological conditions stand out. On the other hand, extrinsic factors include socio-cultural, economic, family, and school conditions. In this sense, it is possible to infer that the different levels of reading comprehension might be connected to

knowledge on the world, which has to do with cultural foundations that are previous to any reading, in which the context of the text connects itself to something previously explored (Kim, 2020).

Literature has shown the importance of parental engagement in the academic success of children and adolescents (Chung et al., 2019; Oliveira et al., 2016; Hardaway et al., 2020; Marturano, 2006). Providing elements such as books, magazines, educational materials, and miniatures, in combination with the connection of family, school, routines, and family structures, positively influence the learning of reading (Oliveira et al., 2016). However, in low-income families, the level of engagement of parents in the education of children is too low. It gets even lower during adolescence. A longitudinal study realized with low-income, Afro-American adolescents hinted at a relation between parent cognitive stimulation at 14 and academic performance at 16 (Hardaway et al., 2020). Such results show how important it is that parents provide materials (books, musical instruments), and educational experiences (museum visits, for example) to adolescents.

In Brazil, family-environment incomes are measured by the Inventory of Family-Environment Resources, or Inventário de Recursos do Ambiente Familiar (RAF), proposed by Marturano (2006), based on the HOME protocol (*Home Observation for Measurement of the Environment*). The RAF takes into account the family-environment resources that might collaborate to learning in the first years of elementary school (Oliveira et al., 2016). It consists of 14 topics, divided into three categories: resources that promote proximal processes, predictable activities that hint at some degree of stability in family life, and parental practices that promote the connection between family and school (Marturano, 2006).

The category that involves the resources that promote proximal processes including activities and experiences that foster development, such as access to books, newspapers, and magazines and the use of free time on activities that develop learning processes, such as trips and other opportunities for interaction with parents, the availability of toys and materials that will pose challenges for logical thinking, and access to programmed learning activities. The category of predictable activities that point at a certain degree of family life security includes routines, regular family meetings, and collaboration in domestic activities. The category of parental practices that leads to a connection between family and school contains indicators if direct participation of parents in the educational life of their children, such as attending PTA meetings, and paying attention to their report cards (Marturano, 2006).

In addition to environmental resources, the family

is a determining factor in the life of adolescents. The family can contribute to a good or to a bad performance at school because problems in family resources might lead to loss in literacy acquisition and learning in general terms. A child might be inserted into situations that involve protection factors or risk factors for development in the family environment. Some risk factors prove closely associated with low socioeconomic levels, and with fragility in family relations. Such risk factors might cause damage and hinder individuals in the development of problem solution, language, memory, and social skills (Baptista, 2005).

When they enter educational institutions, children might present different levels of proficiency in academic skills. Many of these revealed differences are due to the family context that provides the beginning of education. The interest that students dedicate to formal learning environments depends on their history of previous learning activities and experiences (Fantuzzo et al., 2013).

The RAF was proposed for verifying the association between family environment resources and school performance in the initial years of elementary school, and a positive association was presented (Monteiro & Santos, 2013). However, it is questioned whether adolescence retains any association between family environment resources and reading comprehension. Thus, the present study aimed at verifying the association between family environment resources and reading comprehension and fluency among adolescents in the second half of elementary school.

METHODS

Ethical aspects and outlining

The research, of observational, analytical, and cross-sectional nature was approved by the Ethics Committee of the Institution under decision number nº 1.722.230. The adolescents and their legal guardians signed two types of Informed Consent Terms.

Sample

The study was realized by non-probabilistic sample of convenience. 106 male and female adolescents participated, they were situated in the group age between 11 and 16 years, regularly enrolled in classes from the 6th to the 9th years of Elementary School (ES) of two public schools of the western region of Belo Horizonte, and no complaints regarding learning difficulties. The participants were recruited at the school where they were enrolled.

The research excluded individuals with sensorial, neurological, cognitive, or behavioral alterations or individuals that presented some complaint of alteration in the development of speech and language or learning

disorders. For assessing inclusion and exclusion criteria an anamnesis was realized with parents and with pedagogical teams at the schools.

Materials and procedures

The reading fluency and comprehension were assessed by means of an instrument proposed by Gentilini et al. (2020), which facilitates the assessment of the second half of elementary school. The instrument consists of a text entitled “Porque o morcego só voa à noite”, or “Why bats only fly at night”, and of a multiple-choice questionnaire. The instrument is used for collective analyses of general, inferential, and literal reading comprehension and fluency. After handing out copies of the texts to participants, researchers instructed the students to silently read the text very carefully. At the researcher’s request, one minute after the beginning of reading, students were supposed to pause their reading and cross out the last word they had read, and then go back to reading after that. Time was measured with a digital timer. After the reading task, the text copies were recalled and students were given the questionnaire with 10 questions (five inferential and five literal) for evaluation of text comprehension. The participants were instructed to read the questions and pick one alternative as the answer to each question.

After that, the RAF was applied, on ten topics, which corresponded to resource areas previously identified. Originally, the RAF is applied as a semi-structured interview, in which each topic is verbally presented to each participant, where researchers have the freedom to paraphrase the content of the question in case participants show any comprehension difficulty. For each topic, interviewers get started by asking a question, highlighting the items mentioned by the interviewees in their free answers, and then present the other items, one by one. If, in the answer to the first question, one item that does not appear on the list is mentioned, it must be marked out and described as “other”.

Based on the RAF topics, a questionnaire was produced so the students could have a chance to point out answers that reflected their realities, as well as in other studies that assessed parental influence in the academic performance of students (Wang & Cai, 2017). The questions were read out loud by the researchers and, if students showed any comprehension difficulty, the questions and answers could be paraphrased. The answers were punctuated according to the suggestions by the questionnaire author (Marturano, 2006).

Lasting approximately 40 minutes, collection of data took place in the classrooms provided by the school direction during class time, at a time that was established by the teachers so the research would not disrupt school dynamics.

Data Analysis

Researchers used the absolute and relative frequencies in the description of qualitative variables. In the analysis of quantitative variables, researchers used the measures of position, central tendency, and dispersion.

For inferential analysis, the following non-parametrical tests were used: Spearman's correlation, *Mann-Whitney's test*, and *Kruskal Wallis's test*. The 5% significance level was adopted. For the statistical processing and analysis of data, the SPSS software was used, version 21.0.

RESULTS

The results of the Spearman's correlation analysis between the domains of RAF and reading comprehension and fluency showed the inverted relation with reading comprehension and the absence of association with reading fluency. Thus, researchers chose to verify the association of each item of the RAF with the analyzed reading variables. Since there are many analyzed items, we will present only the statistically significant results.

On table 1, researchers present the statistically significant associations between the variables of the domain of proximal processes and reading, whereas table 2 presents the ones related to stability in family life and the family-school relation.

Concerning reading fluency, the participants that reported that they did not play within their homes obtained the best results. Concerning reading comprehension, the adolescents that do not play on the street presented better performance in general and in the literal questions. In the inferential questions, there was a tendency for significance ($p < 0,10$). The ones who did not play within their homes presented better comprehension in literal questions (Table 1).

Concerning the available toys, the presence of interesting materials for the production of figures, balls, kites, marbles, and wooden carts contributed to better performance in reading comprehension. The presence of materials related to the learning of colors, sizes, and shapes, and videogames and the absence of make-believe toys were partially significant for reading comprehension ($p < 0,10$). The adolescents who did not have toys with animal names obtained better results in reading fluency in comparison with the ones presenting different answers (Table 1).

Concerning the excursions, trips, and programmed activities, the participants who reported having taken a trip to another city performed better in reading fluency. The ones who go to the movies and to theaters present better comprehension for literal questions. The adolescents who do not travel by train present better performance in all the analyzed variables for reading comprehension. The adolescents who go to the center

of the city present better performance in general and in inferential questions. Concerning the practice of programmed activities, merely taking lessons in English or in any other foreign language resulted in better reading comprehension in general and in inferential questions (Table 1).

Concerning printed journalism, especially newspapers, the participants with best reading performance reported not having such means of communication at home. The presence of religious books at home was marginally significant for better performance in literal questions ($p < 0,10$). The presence scientific technical books contributed to better performance in general comprehension and the presence of encyclopedias contributed to all analyzed reading variables. The ones who have dictionaries at home presented better general and inferential comprehension. The adolescents who reported not having pedagogical books at home presented inferior performance in the variable for reading comprehension (Table 1).

The relevant variables of the domain of stability in family life for reading performance were presented on Table 2. The dialogue between parents and children on news, films, and other TV programs was marginally significant for better performance in inferential questions. Adolescents whose parents do not help in school tasks were more likely present inferior performance in literal comprehension ($p < 0,10$).

The individuals who reported not having a pre-established bedtime, obtained better performance in reading. Likewise, the ones who reported not having a pre-established routine for watching TV performed better than the ones who reported having pre-determined times. The adolescents who reported not having a routine for taking a shower and for leisure time presented better performance in general and inferential comprehension than the ones who reported following a routine. The adolescents who reported not having a routine for doing homework presented better performance in inferential questions than the ones who reported following a routine (Table 2).

Concerning family presence, the adolescents who reported realizing evening meals with family members were the ones that presented better performances in reading fluency and comprehension in general. There was a tendency to significance for literal and inferential comprehension ($p < 0,10$). The ones who did not get together with family members for breakfast tended to perform better in literal comprehension than the ones who did ($p < 0,10$). The adolescents who got together with their families to watch TV performed significantly better in general and inferential comprehension than the ones who did not. For those who had their whole family living together there was a tendency to significance towards

Table 1. Association between Processos Proximal Processes and Reading.

Proximal Processes	Reading	Average	Medium	DP	Mín	Máx	Value p
No home playing	TQL	3,62	4	1,28	1	5	0,044
N=45	Fluency	123,87	121	41,77	69	284	0,035
No playing on the street	TAG	7,19	8	2,37	2	10	0,013
N=58	TQL	3,60	4	1,46	0	5	0,006
Animal name toy	Fluency	133,52	135	44,45	55	284	0,004
(no) N=25							
Toy: construction	TAG	7,22	8	2,52	2	10	0,001
	TQL	3,55	4	1,63	0	5	0,002
N=65	TQI	3,66	4	1,22	1	5	0,007
	TAG	6,88	8	2,59	1	10	0,010
Ball, kite, marble, wooden cart N=85	TQL	3,36	4	1,55	0	5	0,030
	TQI	3,52	4	1,34	0	5	0,009
Movies or theater N=68	TQL	3,47	4	1,44	0	5	0,045
	TAG	6,76	8	2,63	1	10	0,043
Train trip (no) N=91	TQI	3,46	4	1,36	0	5	0,032
Trip to another city N=51	Fluency	124,12	121	46,51	49	284	0,041
	TAG	6,84	8	2,61	1	10	0,035
City center N=82	TQI	3,51	4	1,35	0	5	0,026
	TAG	8,20	9	2,30	4	10	0,027
Languages N=10	TQI	4,30	5	1,05	2	5	0,018
Newspapers (no) N=15	Fluency	140,33	133	44,99	70	265	0,008
	TAG	7,43	8	2,32	2	10	0,004
Technical books/scientific N=44	TQL	3,64	4	1,46	0	5	0,017
	TQI	3,80	4	1,19	1	5	0,008
	TAG	7,18	8	2,53	2	10	0,050
Encyclopaedia N=39	TQL	3,59	4	1,56	0	5	0,031
	Fluência	125,23	127	42,85	70	284	0,040
Dictionary N=81	TAG	6,80	8	2,64	1	10	0,055
	TQI	3,49	4	1,36	0	5	0,052
School books (no) N=23	TAG	7,74	9	2,41	3	10	0,009
	TQI	4	5	1,38	1	5	0,006

Note. Mann-Whitney's test; $p < 0,05$; fluency – words read by per minute; TAG – total sum of right answers; TQL – total number of literal questions; TQI – total number of inferential questions; DP= standard deviation; Min – minimum; Max – maximum

better performance in the inferential comprehension of reading (Table 2).

The domain related to the school-family connection (direct participation by parents in school life), presented on table 2, pointed at the fact that adolescents who do not have active participation by family members in their school activities perform

better in reading comprehension than the ones who get family interference.

DISCUSSION

According to the literature, the literacy environment at home explains variations in linguistic skills (Malhi, Menon, Bharti, & Sidhu, 2018) and an unsuitable

Table 2. Relation between reading and family connections and the school-family.

Family-life stability	Reading	Average	Medium	DP	Mín	Máx	Value p
Dialogue: news, films, TV N=76	TQI	3,55	4	1,23	0	5	0,052
Routine: shower (no) N=39	TQI	3,72	4	1,29	1	5	0,043
Routine: leisure (no) N=64	TAG	6,97	8	2,57	1	10	0,041
	TQI	3,61	4	1,24	0	5	0,030
Routine: sleep (no) N=52	TAG	7,12	8	2,62	1	10	0,023
	TQL	3,50	4	1,63	0	5	0,037
	TQI	3,62	4	1,33	0	5	0,050
Routine: TV (no) N=69	TAG	7	8	2,57	1	10	0,017
	TQI	3,61	4	1,30	0	5	0,010
	Fluency	121	121	44,15	49	284	0,017
Presence of family: dinner (yes) N=93	TAG	6,73	8	2,62	1	10	0,035
	TQI	3,44	4	1,33	0	5	0,053
Presence of family: watch TV (yes) N=83	Fluency	116,73	115	42,66	49	284	0,029
	TAG	6,86	8	2,53	2	10	0,044
Family support for school tasks (no) N=24	TQI	3,53	4	1,27	1	5	0,031
	TQL	3,88	5	1,62	0	5	0,042
Verify notebooks (no) N=35	TAG	7,34	8	2,31	3	10	0,049
	TQL	3,66	4	1,49	0	5	0,038

Note. Mann-Whitney's test; $p < 0,05$; fluency – words per minute; TAG – total number of right answers; TQL – total number of literal questions; TQI – total number of inferential questions; DP= standard deviation; Min – minimum; Max - maximum

environment of domestic literacy might lead to disparities in reading (Oliveira et al., 2016; Esmaeeli, Kyle & Lundetræ, 2019). Thus, the parental relations and the resources of the family environment have the capacity to interfere in reading processes. Therefore, this study attempted to verify the association between the family environment resources and the reading skills of adolescents enrolled in the second half of elementary school in the public education system.

Researchers observed a reversed relation between the domain of RAF and reading comprehension, despite previous studies (Baptista, 2005; Monteiro & Magalhães, 2013) com tal instrumento apontarem para uma relação direta entre o RAF e o desempenho em leitura (Monteiro & Magalhães, 2013). However, such studies were realized with children from the first half of elementary school and the information was collected from families, whereas in the present study the information was self-referred by the adolescents, which might have influenced their perceptions. In addition, there is the fact that the questionnaire approaches, in some questions, the presence of things and daily practices that might end up in further distance from the interests and routines of the adolescents. Besides that, there might

be a consensus in literature on the positive effects of parental engagement on the academic performance of students, but not on what form of parental engagement is the most effective (Wang & Cai, 2017).

Since no connections were found with the domains of the RAF, researchers chose to verify the associations for each item of the instrument. Concerning the items that investigate the proximal processes, known primary mechanisms of human development, researchers verified that merely playing at home and on the street presented statistically significant associations with reading comprehension and fluency. The results of the present study suggest that adolescents who do not play on the street and at home present better performance on reading comprehension than the ones who do it. In the studied age group, playing does not seem to contribute to reading comprehension, whereas having played at childhood seems to produce a positive influence.

Playing allows children to experience games, learn about reality, and become capable of developing their creative potential (Cerisola, 2019). Playtime also prepares children for some future activities, stimulates attention, concentration, self-esteem, and helps develop

relations of trust with themselves and others. In this perspective, the ones who play learn to signify the thoughts of their partners by means of metacognition, typical of symbolic processes that promote cognitive development (Sampaio, David, Catellani Filho, & Húngaro, 2017) and of dimensions that integrate the human condition (Sarriera, Tatim, Coelho, & Búcker, 2007).

In view of the presented facts, we can presume that the observed result of the present study related to playtime will be able to influence the management of free time by the participants of the research. Thus, we can infer that the adolescents who do not play have more time for studying or other leisure-time activities that will contribute to an increase in knowledge on the world for this age group. Such data corroborate the research realized in the southern region of Brazil, in which there was evidence of the predominance of non-structured activities, such as when adolescents watch TV or go outside to play. The age group from 12 to 14 dedicates most of their time watching TV and playing, whereas the age group from 15 to 18 spend more time doing leisure activities outside (Sarriera, Tatim, Coelho, & Búcker, 2007).

Concerning the relation between the presence of toys and reading, adolescents who had educational materials achieved better results in reading comprehension. Such result indicates that educational toys in an adolescent's childhood tend to stimulate a more efficient reading comprehension. The presence of toys potentializes playing, which helps children work on their relationship with the world, while sharing spaces and experiences with other people (Healey & Mendelsohn, 2019). On the other hand, the ones who reported not having toys that refer to name of animals presented better reading fluency. We can suppose that such isolated information is not relevant or representative enough because a restricted class of word category could have little impact on the formation of orthographic matters in order to interfere in reading velocity.

Education and leisure time are connected factors that are important to the world nowadays. These activities get more and more articulated in the everyday lives of individuals. For that reason, it seems necessary that educators and managers become aware of this phenomenon. Individuals, by participating in leisure activities, develop both individually and socially, which is indispensable for guaranteeing their well-being and more active participation in the development of personal, family, cultural, and community needs and aspirations (Vignadelli, Ronque, Bueno, Dib, & Serassuelo Junior, 2018).

Children and Adolescents have the right to leisure time activities, games, information and culture, according to their level of development. In this sense,

the practice of tourism proves an activity capable of providing information, culture, leisure and fun for children, in addition to a cultural learning proposal by means of education in the formal and informal levels (Oliveira et al., 2016). Culture and access to new information obtained direct relation with better performance at reading by the researcher participants. Traveling and the perception of landscapes are part of the experiences for development of meanings during childhood. The practice of tourism might lead to the independence of child tourists, as well as moments of complicity and bonding with parents. It also leads to personal development, the perception of new realities, and learning in general for children (Kushano, 2013). When there is parental engagement in leisure time, it is possible to observe greater academic self-regulation which is a sign of good academic performance (Chung et al., 2019). In addition, parents who get involved in the learning of their adolescents also tend to engage in leisure-time activities with them (Chung et al., 2019).

Likewise, it is believed that programmed activities outside classroom time also contribute to the amplification of knowledge on the world. Thus, in the discovered results it was possible to observe that the ones who reported having realized a trip to a different city in the past 12 months, obtained better reading fluency in comparison to the ones who never took a trip. For reading comprehension, the adolescents who go to the center of the city, take leisure-time excursions, and take English lessons performed better.

Concerning the presence of printed newspapers and magazines, it is possible to observe that printed journalism has become notoriously obsolete in our everyday lives. During the research, it was observed that the ones who reported not having printed newspapers at home presented better reading patterns. Such fact can be explained by the decrease in the circulation of printed material as a means to convey news within the globalized context in which we are inserted. The evolution of online journalism, along with the integration of social media, has led people to take more active participation and have free, fast access to news from all over the planet (Canavilhas, 2011).

Thus, although children and adolescents are not reading printed newspapers and magazines, they might be more involved in online reading, which justifies the obtained results when it comes to the absence of newspapers and magazines. It corroborates that fact that the other means of communication used nowadays can also stimulate the potential for reading fluency in individuals.

The presence of an assortment of books in the family environment of the participants also proved relevant for reading performance because it allows teenagers to get into contact with a greater number of words,

and it consequently tends to produce better reading fluency and comprehension than for the ones who do not have this type of contact with a larger vocabulary input (Oliveira et al., 2016). A study that compared the investment in reading material between a group of good readers, and another one with difficulties in reading comprehension, showed that the parents of the students in the first group invested more in reading (Sousa & Hübner, 2017).

Despite the fact that encyclopedias are not present in our daily lives nowadays, they play an important role as stimulators of reading skills. It is considered that they can lead to an expansion in children's vocabulary and can be capable of teaching facts and curiosities still unexplored by readers (Sousa & Hübner, 2017).

Some studies take, as a starting point, the fact that school is an extension of the adolescents' homes. Therefore, we can say that school must strengthen the connection between adolescents and families, which will benefit the educational process and the formation of individuals. The work of the family along with the school becomes increasingly important towards everyone speaking the same language and helping children learn (Coelho & Dell'Aglio, 2018).

It is believed that this makes sense when it comes to children. But the scenario changes for adolescents. In the present study, it is possible to observe that teenagers whose parents help in doing homework and other school assignments present inferior performance in reading comprehension. We can suppose that, in this phase, parents expect greater autonomy by their children concerning school activities. Thus, they realize the monitoring of adolescents only when they present previous difficulties, which leads us to believe that the participants in the sample are supported because they are individuals that naturally present more difficulty at school. Another explanation is that, in western cultures, adolescents are more autonomous and respond negatively to any attempts by parents that they consider invasive, whereas the same parental behavior is perceived by Asian children as a sign of affection (Wang & Cai, 2017).

Family and the social context are influences for teenagers regarding emotional, social, and educational development (Martins et al., 2014). The form of parental care (whether they are supportive, affectionate, or responsive) produces an impact in the academic development of adolescents (Chung et al., 2019). As expected, adolescents that get together and dialogue on diverse themes with their families obtained the best results in reading comprehension (Chung et al., 2019; Oliveira et al., 2016). Such result indicates that adolescents that have a stronger connection with their families tend to present the best results in reading comprehension.

In the domain of family and school, the ones who obtained better performance in reading fluency reported not having a routine for sleeping. However, we know that sleep is an integral component of healthy development during early childhood, producing multiple results for development (Mindell, Leichman, DuMond, & Sadeh, 2017) and, despite sleep being related to better reading performance, we can say that answers might prove inconsistent due to adolescent shyness, which can make them omit information regarding their routines and the rules they must follow, while seeking for acceptance by their peers. After all, we know that the establishment of routines proves beneficial for family functions in general.

When it comes to television, the participants the obtained better results in reading reported that at home they did not follow a pre-established routine for watching TV. The use of television for an indetermined amount of time deprives individuals of real experiences of socialization. Thus, the limited use of TV produces benefits for child development. We suppose that, nowadays, adolescents dedicate little time to reading, while there is more time for television (Schaan et al., 2019). The questionnaire does not investigate the time of exposure to television, but we can see the importance of the establishment of a time of the use of electronic devices and the time for activities that stimulate social aspects and the maintenance of reading skills.

Concerning reading comprehension, adolescents in general that do not report following a routine, presented better performance in reading comprehension. Literature presents contrasting results, in which individuals oriented by a routine achieve better results (Monteiro & Santos, 2013). Concerning the result found, it is worth it to highlight the fact that self-perception by adolescents might be different from the perception of their families, which might justify an inverted result in this and in the other categories.

In the category of microsystems, the presence of family was analyzed in routine contexts. It is known that positive parental practices, such as the realization of activities together, influence development as a whole (Chung et al., 2019; Oliveira et al., 2016). The current result corroborates data already described in literature because the participants that reported enjoying the presence of their parents and family members at dinner time were the ones that presented satisfactory results in the assessment of reading fluency. For example, we can mention a longitudinal study that used data from the *UK Millennium Cohort Study*, which demonstrated that positive parenthood decreased the negative impact of poverty and contributed to better school education by the children (Malhi et al., 2018).

Thus, it is important to highlight the fact that the present study presents results that are applicable

to the studied population and presents limitations, such as the number of participants, and the fact that the questionnaire was self-referred and promoted a certain inconsistency in the answers. Besides that, because it is a cross-sectional study, it is not possible to establish a relation of causality. In future research works, we suggest an amplification of the sample with individuals from different socio-economic levels, as well as the application of the RAF questionnaire on family members, with the participations of the adolescents. Since adolescents who feel closer to their parents are more open to parental influence (Wang & Cai, 2017), it might be interesting to investigate the relationships between adolescents and their parents.

Besides that, it was possible to observe the need for updating the RAF questionnaire because it mentions resources that are not very often used such as encyclopedias, train trips and printed newspapers, and does not approach current resources of the family environment such as access to smart phones, electronic gaming time, virtual media, and so on.

The results found in the present research evidence the relations found in the three domains of the RAF: proximal processes, processes of environmental stability, and processes of microsystems with the participants' reading.

Thus, we can conclude that adolescents that have resources that promote proximal processes have a better performance in reading fluency and comprehension. The category of predictable activities, which signal at stability in family life showed a result that was contrary to expectations and can be justified by the form of application of the protocol. Concerning parental practices, an environment of family support might contribute to a better reading performance.

Another aspect that was possible to observe it that the habits and traditions of families reflect themselves directly on school behavior – especially reading performance – by participating children and adolescents. The positive effects of the interaction with parents and the presence of some family resources prove beneficial when associated with school performance (Fantuzzo et al., 2013; Pereira et al., 2015).

In this sense, it is necessary that connections between school and family be reinforced. It is important that this theme be discussed and strategies created, in the school level and also in the realm of public policies that invest in partnerships that promote the functional literacy of families in order to raise awareness on the importance of school education in order to enhance school performance among adolescents, and amplify favorable resources in the environment towards learning and the strengthening of the relation between family and school so that there can be a partnership for stimulating learning by adolescents.

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