

# Children's health perception through creative drawing language

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### Abstract

**Objective.** Children's health perception through creative drawing language the identification of external factors perceived as negative or positive to health by children. **Methodology.** A descriptive study that describes the analysis of the expressive language of drawings and written comments. The sample consisted of 130 children in 3rd and 4th classes from four randomly selected schools, in the region of Central Portugal Continental (Coimbra district). The study was conducted during the first semester of 2011. The data collection was performed by means of Rodrigues' drawing/writing sheet. This sheet is divided in 4 areas (2 of them to draw what children consider good for health and the other 2 to write the content or message of the drawings). The themes expressed are classified based on the priority areas for the promotion of healthy lifestyles. **Results.** children value healthy food, physical activity, mental health, prevention of inappropriate substance consumption and health and environment. The drawings and comments show links between diet and physical exercise, and between mental health and interpersonal relationships. **Conclusion.** Drawings and comments facilitate health professionals understanding of children's perception of health positive and negative factors. The results of the study allow planning intervention strategies in school health from infant perception.

**Key words:** perception; child; health; drawings.

## Percepción de la salud de los niños expresada en el lenguaje creativo de los dibujos

### Resumen

**Objetivo.** Identificar los factores externos percibidos por los niños como negativos o positivos para salud. **Metodología.** Estudio descriptivo en el que se hizo análisis del lenguaje expresivo de los dibujos y sus comentarios escritos. Los participantes fueron

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130 niños de 3º y 4º año de enseñanza básica de cuatro escuelas seleccionadas al azar, de la región de Centro de Portugal Continental (Distrito de Coimbra), durante el primer semestre de 2011. Para la toma de información, se utilizó la ficha de dibujo/escritura de Rodrigues, que está dividida en cuatro áreas (dos para dibujar cosas que consideran buenas para la salud y otras dos para escribir el contenido o mensaje de los dibujos). Las temáticas expresadas son clasificadas teniendo como base las áreas prioritarias para la promoción de los estilos de vida saludables. **Resultados.** Los niños valoran la alimentación saludable, la actividad física, la salud mental, la prevención del consumo de sustancias y la salud y el medio ambiente. En los dibujos y comentarios se observan vínculos entre la dieta y el ejercicio, y entre la salud mental y las relaciones interpersonales. **Conclusión.** El personal de salud entendió, a partir de los dibujos y sus comentarios, la percepción que tenían los niños acerca de los factores positivos y negativos para la salud. Los resultados obtenidos permiten la planeación de las estrategias de intervención en salud escolar desde la percepción infantil.

**Palabras clave:** percepción; salud; niño; dibujos.

## A percepção de saúde das crianças expressa na linguagem criativa dos desenhos

### ■ Resumo ■

**Objetivo.** Identificar os fatores externos percebidos pelas crianças como negativos ou positivos para saúde. **Metodologia.** Estudo descritivo no que se fez análise da linguagem expressiva dos desenhos e seus comentários escritos. Os participantes foram 130 crianças de 3º e 4º ano de ensino básico de quatro escolas selecionadas a esmo, da região de Centro de Portugal Continental (Distrito de Coimbra), durante o primeiro semestre de 2011. Utilizou-se para a tomada de informação a ficha de desenho/escritura de Rodrigues, que está dividida em quatro áreas (duas para desenhar coisas que consideram boas para a saúde e outras duas para escrever o conteúdo ou mensagem dos desenhos). As temáticas expressadas são classificadas tendo como base as áreas prioritárias para a promoção dos estilos de vida saudáveis. **Resultados.** Os meninos valorizam a alimentação saudável, a atividade física, a saúde mental, a prevenção do consumo de substâncias, e a saúde e o médio ambiente. Nos desenhos e comentários se observam vínculos entre a dieta e o exercício, e entre a saúde mental e as relações interpessoais. **Conclusão.** Os desenhos e seus comentários facilitaram entender ao pessoal de saúde a percepção que tinham as crianças a respeito dos fatores positivos e negativos para a saúde. Os resultados obtidos permitem o planejamento das estratégias de intervenção em saúde escolar desde a percepção infantil.

**Palavras chave:** Percepção; criança; saúde; desenhos.

## Introduction

The language through drawings starts very early in children's life, playing a decisive role in their intellectual development. Based on Piaget's paradigm for the specific and individual cognitive-adaptive approach, it is observed that children aged between 7 and 12 years develop their logical thinking skills gradually at the level of concrete operations. They leave us fascinated with the creative range of their achievements

and expressive potential. It is interesting to note the easiness with which children reveal much of their world through different expressive means, especially through their drawings.<sup>1</sup> In order to study children's subjective perceptions of their own health and the external determinant factors, we have been developing a structuring project of health education for children aged between 6 and 12 years in schools, using the Edutherapeutic

Method. This method, which was developed by Rodrigues<sup>2</sup> in a quasi-experimental study with children with special education needs, uses drawing/writing as the most adequate psychoeducational technology to release children's creativity in the context of educative mediation, by bringing together children's cognitive and emotional blockades in a process called "Holistic Regulation Process". Subsequently, the Edutherapeutic Method was adapted to hospitalized children preparing for surgery in a quasi-experimental study in hospital setting.<sup>3</sup> The method was then adapted to the study of the health perceptions and health education strategies of school-aged children.<sup>1</sup> This descriptive study identifies the external factors perceived by children as being good or bad for health in the expressive language of drawings, through the draw/write sheet.

For children, drawing something results from the need to extend a specific object beyond its mental representation. Specifically as instrument of measure of psychological processes, drawing allows us to understand and interpret the personality characteristics and the way in which the world and the cultural values are perceived.<sup>4</sup> Drawings and graphic symbols are the first means which are spontaneously used by the child to transmit ideas, to "talk" about their world.<sup>5,6</sup> The power of children's drawing and its narrative function are recognized as a way of exteriorizing experiences, thoughts and feelings, and as an instrument for mediated communication between adult/child and child/culture.<sup>7</sup> The drawing in itself carries valuable information about the shared meanings and especially if combined with oral and written language. It becomes a powerful source of information about children's perception of reality if the production of the drawing is complemented by the record of verbalizations.<sup>8</sup> Children's opinions about their drawings are essential to understand the experiences and feelings attributed in context.<sup>9</sup>

The child's lack of motivation to draw can be a sign that something is interfering with their space/life. From a health perspective, there are several authors who recognize this extraordinary expressive and therapeutic power of children's

drawing to allow us access to children's fears and hopes. Their pictured reflected not only their current state of mind, but also past experiences and future prospects.<sup>10</sup> The drawing provides health professionals with a set of guidelines to relief pain and/or reduce both anguish and anxiety. To this end, further research and the use of children's drawings in clinical practice are encouraged.<sup>11,12</sup> Listening to what children have to say in words, or through drawings, is a prerequisite to interact with them.<sup>13</sup> The study of children's health perceptions through drawing is of great value today, as recommended by WHO guidelines. A study carried out by Imianowski<sup>14</sup> analyzed school-aged children's perceptions of health. Sixty-eight drawings about "health" of children aged between 8 and 12 years were analyzed. Key concepts of graphic productions were used to interpret and analyze children's drawings: oral hygiene, environmental conditions, diet and health. The results showed that there are different perceptions of health and social factors such as the family, the school and the environment can influence the concepts formed by children.<sup>9</sup>

Piko e Bak<sup>15</sup> aimed to describe the concepts of health, illness, health promotion and disease prevention of 128 eleven-year-olds from two schools in Hungary. The children responded to open-ended questions about health and illness by drawing and writing their responses. In all research contexts which used a creative combination of drawing and writing, the forces of each method were promoted and the limitations were minimized, as described by Pridmore<sup>16</sup> in a research study aimed to analyze children's perceptions of good and bad things for health. This study inspired the application of evidence from the Edutherapeutic Method in health education for children in schools.<sup>2</sup> This method was developed in several descriptive, correlational and quasi-experimental studies, using scales to measure children's health profile and the draw/write sheet.<sup>1,17</sup> This line of research has made it possible to assess the health perceptions and the interventions in context, by promoting innovative approaches to education, and implementing child-to-child strategies in which children not

only learn about health, but also about positive health attitudes, in accordance with Pridmore's studies.<sup>18</sup>

## Methodology

A descriptive and comprehensive qualitative study was carried out to analyze the expressive language of children's drawings. The data collection instrument was the draw/write sheet by Rodrigues,<sup>1</sup> which was applied to a total sample of 130 children from 4 schools, located in the Center region (district of Coimbra) of Mainland Portugal, during the first semester of 2011. Four 3<sup>rd</sup> and 4<sup>th</sup> grade classes (basic education) from schools belonging to two school clusters (A and B) were randomly selected.

The draw/write sheet is divided into 4 areas (two upper areas for children to draw things that they consider good and bad for health; and two lower areas, at the base of the sheet, where children write down the content of the message in their drawings. It is important to clarify that the analysis only takes into account children's expressed content, and it is not an attempt by the researcher to make a psychodynamic analysis of

the drawing. The themes expressed by children are classified and ranked based on the priority areas for the promotion of healthy life styles of the National Program of School Health:<sup>19</sup> mental health; oral health; healthy diet, physical activity, environment and health; promotion of safety and accident prevention; sexual and reproductive health; and education for consumption.

During content analysis, the registration units are encoded so as to allow for the identification of subjects and their gender. For example, (F38m) means F (*Ficha de Desenho-Escrita* - Draw/Write Sheet), (38) subject, (m) male. The project was authorized by the Directorate-General for Education and the National Commission for Data Protection, fulfilling all ethical-legal requirements, especially with regard to the consent of children's parents and teachers' involvement.

## Results

**Schools and school clusters.** Two basic and secondary schools, belonging to the school cluster of the Pinhal Interior Norte Subregion; 2 basic schools, belonging to the school cluster of the Baixo Mondego Subregion (Table 1).

**Table 1.** School clusters and schools used for data collection

School Clusters	Schools	School year	Number of draws/Write sheets
A	Basic	(3rd)	63
	Basic/Secondary	(4th)	36
B	Basic	(3rd)	17
	Basic	(3rd)	14

**Children's characteristics.** Of the 130 children distributed by the four schools, 67 are males and 63 females, aged between 8 and 13 years. Thus, the drawings in 130 draw-write sheets (99 of school cluster A and 31 of school cluster B) were analyzed.

**Children's opinion about good and bad things for their health.** During the content analysis of children's drawings, although each drawing allows for an immediate reading by the researcher, we followed the reading strategy of double-coding

(drawing and text) indicated by the literature, thus valuing the meaning assigned by the child to the drawing, which is expressed in writing. As we can see next, the drawing allows us to better understand and interpret the various aspects of life experienced by the child, as well their perception of other aspects, including the cultural values.<sup>4</sup>

**Eating habits and physical activity.** In the analysis, the drawings about food were grouped according to the new food wheel. Table 2 shows that children assign good qualities to fruit (50%), followed by vegetables (33.1%), dairy products (31.5%), and water (26.2%). Children have good literacy skills in the field of food, assigning less importance to fats. However, legumes are not one of children's preferences (2.3%).

Examples of children's opinions about the importance of food (Table 3): «To have a diet rich in vitamins, proteins and minerals is good for your health, as well as sports» F37f; «Milk is good for everything, the vegetables and the fruit are also good because they have vitamins; Juices must be natural; Meat and fish are also needed» F38m.

A high number of children's comments associated a good diet with the practice of physical exercise (Table 2): «Walking is good for your health» F66m; «Doing exercise, eating fruits and vegetables gives more life and health» F43f.

**Mental Health.** We found associations in children's drawings between positive expressions concerning the need to live a happy life and to be with friends, and negative expressions concerning the inappropriate use of substances (Table 2). In the area of mental health, most expressions in children's drawings refer to incorrect consumption: «Smoking is bad» F68m; «I drew a box of pills» F105m; «Tobacco is bad for everything, especially

for the lungs, as well as wine, beer and other alcoholic drinks»; «Coca-Cola is bad for your organs and too many sweets are bad for your health» F38m; «This drawing is very bad for your health because chocolate is bad for your health, Coca-Cola is bad for your health, cigarettes drive people crazy and alcohol too» F44f.









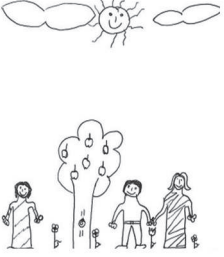

**Oral Health.** Children establish a strong relationship between difficulties related to oral health and the consumption of alcohol and tobacco, drugs, sweets, chips (Table 2). The importance of prevention in this area led to a strategic intervention in suburban schools, with the implementation of the edutherapeutic technique "Health Magic Box".<sup>20</sup>

**Health and environment.** Once again children establish a parallel between health, environment and lifestyles (Table 2). Children's opinions about this issue emerged in all schools and are explored in detail, as can be seen in the content of some registration units about positive aspects: «My drawing describes a picnic in the forest in which people are eating: bread, natural juices and other healthy food» F56m; «We should drink water, not wine, protect the nature, and put the trash in the trash can» F109m; «...wash our hands, take a shower» F113f; «We should drink water and eat bread because we can't live without water and the bread is the body of Christ» F27m; and negative aspects «The sun is not good for your health» F12f; «Not carrying knives or guns» F16m; «Smoking causes lung cancer» F57f; «I think that we shouldn't smoke or drink alcohol, because tobacco damages the lungs, and alcohol damages the brain and can kill» F53m, F127f; «Alcohol is bad for your health because it has no vitamins and energy, and that's why so many people die» F52f; «Drunk driving is bad» F108m, F111f.

**Table 2.** Distribution of the indicators/drawings according to the Food Wheel

Food Groups	n	%
Cereals	18	13.8
Vegetables	43	33.1
Fruit	65	50.0
Dairy products	41	31.5
Meat, Fish, Eggs	30	23.1
Legumes	3	2.3
Fats and Oils	1	0.8
Water	34	26.2

**Table 3.** Children's opinions about what is good or bad for health

	Good for health		Bad for health	
Eating habits		<p>«The girl is eating a healthy meal» F119m</p>		<p>«The girl eats a lot of chocolate, then she will regret being fat» F60f</p>
Physical activity		<p>«Doing exercise, eating fruits and vegetables gives you more life and health» F43f.</p>		<p>«She's not having fun, she doesn't open the windows and she only watches TV and that is bad» F121f</p>
Mental health		<p>«We need to talk to our friends» F110f «Because dating is good» F99m</p>		<p>«You can't eat too many candies, drink too much alcohol, it is very bad for your health and causes diseases» F43f</p>
Oral health		<p>«The girl will wash her teeth because then they will be healthier and she will not get dental caries» F60f</p>		<p>«The boy ate a lot of candies and then he regretted it because now his stomach aches and he has dental caries» F119f</p>
Health and environment		<p>«I chose this drawing because it symbolizes nature, the pure air of the lands» F89f;</p>		<p>«A lady smoking, it is bad for your lungs» F129f;</p>

## Discussion

In accordance with the literature, the results show that children's health perceptions are very different, depending on social factors, such as the family, the school and the environment<sup>9</sup>. However, in this study, 130 children of two school clusters and four schools show in their drawings that they have health literacy skills, which are suitable to their level of development. These schools are part of similar geographic and cultural contexts, thus no significant differences were found regarding their perceptions of what is good or bad for their health. In other studies, namely by Predmimore<sup>16</sup>, the socioeconomic variables and the inequities of the health determinants explained the opposite perceptions of the quality of a particular food.

It was found that most indicators produced by the child are related to a greater care with food. The concept of "healthy food" is present in many drawings. A large number of children are very critical of dietary errors and, on the other hand, recognize the nutritional and protective importance of vitamins, proteins and minerals of many food products.

Literacy in mental health is a priority of the World Health Organization, especially since we live in a moment in which the economic crisis lead to inequities in the access to mental health protection and prevention. Children's drawings revealed associations between positive expressions, concerning the need to live a happy life and to be with friends, and negative expressions, concerning the inappropriate use of substances. A study carried out by Noronha and Rodrigues<sup>17</sup> on the health profile of children aged between 8 and 12 years underlined the mental health factors of school-aged children: the lack of interest in study, the low resilience, sadness and fear. In the previous stages of development, the child's fear was to lose the parents' love; now that fear is transferred to the colleagues as the child is afraid of disappointing them and not being accepted by them.<sup>21</sup>

The entry to school is marked by major changes in the socialization process, as the child starts to

establish the first bonds outside the family. The search for the group and the time spent playing with peers is a requirement for the child to feel, progressively, more secure and develop autonomy within interdependence. This idea is consistent with the scientific literature; it is a pre-requisite to interact with children, to listen to what they have to say in words, or through drawings.<sup>13,1,18</sup>

The information in the drawings provides health professionals and teachers with a set of guidelines to promote the mental health of children in schools, guiding and helping them to reduce anguish and anxiety, as reported by Kortessluoma, Punamaki & Nikkonen<sup>11</sup> & Cherney.<sup>12</sup> Oral health, followed by mental health, is considered to be a priority area in the promotion of healthy lifestyles, in accordance with the National Plan of School Health, Decision no. 12.045/2006 (2<sup>nd</sup> series).<sup>19</sup> In the expressive language of children's drawings, it was found that this behavior is deep-rooted in most children of Basic Education from the two school clusters analyzed. Children establish strong associations between oral health and the consumption of alcohol, tobacco, drugs, sweets and chips.

Environment and health is currently a priority area of the health plan, especially in terms of its involvement with the exercise of citizenship. It was interesting to see how children express their great interest for the environment in their creative drawings. The children from these schools have high ecological sensitivity and an altruistic sense of protection of cultural values,<sup>4</sup> which confirms a positive influence of education in the school and in the community.

In this sample of children, data were only collected using the draw/write sheet, so as to describe and classify children's opinions expressed in their drawings and comments. The results only allow for the comprehensive analysis and discussion of the external health factors perceived by the children, and they can be used to facilitate communication with the children about health in their school

context. The results are limited to allow for the development of a health profile and the design of a strategic plan to intervene in practice. In relation to previous studies in which we used the draw/write sheet, we moved forward with the technique of analysis using convergent matrices and trying to bring closer external health factors which are correlated from the children's point of view. In a further study using the Edutherapeutic Method, we will establish the convergence between the perceived health profile, through a questionnaire about health and well-being, and the perception of external factors observed in the draw/write sheet.<sup>1</sup> In this way, it will be possible to analyze the association between variables and differences according to groups, for example gender differences, as mentioned by Cherney<sup>11</sup> and Rodrigues & Apóstolo.<sup>22</sup>

**Conclusion.** The aim of this study was to identify the external factors perceived by the child as being negative or positive for health in the expressive language of drawings, through the draw/write sheet, and it was fully accomplished. The data collection instrument, despite its simplicity, has proved its technical-educational and research potential, as in previous studies. The expressive richness of the drawings complemented by children's written comments allowed us to identify what children perceive as being better and worse for health. The clarity of the drawings' language made it possible to analyze the health areas that children see as a priority, organized as follows: healthy diet, physical activity, mental health, substance use, health and environment, in accordance with studies by the World Health Organization. Children are very critical of dietary errors and perceive the relationship between health, environment and lifestyles. In the drawings and their comments, associations were found between diet/physical exercise, and mental health/interpersonal relationships.

Children had to answer a question at the end of the draw/write sheet: "Would you like to know more about your health, the health of others and the world?", and most of them said that they wanted to learn more about their health. This opens a possibility for future strategic interventions in the

area of children's health education. According to the Edutherapeutic Method, children's drawings facilitate the interaction between educators, health professionals and children and technical-educational tools, which are effective in planning and action. In further studies we will continue to explore the potential of the draw/write sheet, in convergence with the health and well-being perception scale, to reflect on the association of health variables perceived by the children and design health promotion and health education strategies to be implemented in schools.

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