Theoretical model of nursing care for children with obesity

ABSTRACT
Objectives: to describe a theoretical model of nursing care for children with obesity in Primary Health Care. Methods: Grounded Theory and the theoretical/philosophical framework of Virginia Henderson were used. The research was conducted in Family Basic Health Units and in Specialized Services in the city of Campina Grande, Paraíba, Brazil. A total of 24 participants composed four sample groups. Data were collected through semi-structured interviews, between April and October 2015, and analyzed by the constant comparison method. The analysis occurred by initial coding, construction of diagrams and memos, axial coding and reflection on the paradigm and on the emerging theory. Results: six categories emerged from the data. Nurses worrying about the care of children with obesity as a neglected area in Primary Health Care was the theoretical model. Final Considerations: the phenomenon is related to the individuality of nursing care and the need for shared responsibilities.

Descriptors: Obesity; Child Care; Nursing Care; Primary Health Care; Grounded Theory.

ORIGINAL ARTICLE

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RESUMO

Descritores: Obesidade; Cuidado da Criança; Cuidados de Enfermagem; Atenção Primária à Saúde; Teoria Fundamentada.

RESUMEN
Objetivos: describir el modelo teórico de atención del enfermero para niños con problemas de obesidad en la Atención Primaria de Salud. Métodos: se utilizó la Teoría Basada en Datos y el marco teórico/filosófico de Virginia Henderson. La investigación se realizó en diversas Unidades Básicas de Salud Familiar y Servicios Especializados en Campina Grande, Paraíba, Brasil. Hubo 24 participantes que formaron cuatro grupos de muestra. Los datos se recogieron mediante entrevistas semiestructuradas, entre abril y octubre de 2015 y se analizaron mediante el método de comparación constante. El análisis se realizó utilizando la codificación inicial, la construcción de diagramas y memorandos, la codificación axial, seletiva y la reflexión sobre el paradigma y la teoría emergente. Resultados: de los datos surgieron seis categorías. El modelo teórico estaba constituido por el enfermero preocupado con el cuidado de niños con obesidad como área desatendida en la Atención Primaria. Consideraciones Finales: el fenómeno traspasa la individualidad de la atención del enfermero y se depara con la necesidad de una responsabilidad compartida.

Descriptores: Obesidad; Cuidado del niño; Atención de Enfermería; Atención Primaria de Salud; Teoría Fundamentada.
**INTRODUCTION**

Nursing care for children with obesity in Primary Health Care (PHC) has become a prominent theme because it is associated with changes in the lifestyle of today's society, regardless of economic level, and because it requires professionals to have specific skills and provide multidisciplinary care\(^7\).

Obesity affects children, families and society and is an extensive and serious problem\(^8\). For this reason, obesity is included in child health actions in PHC. Obesity can be defined as a chronic multifactorial disease characterized by excessive accumulation of adipose tissue and associated with an imbalance between intake and energy expenditure\(^9\).

Overweight and obesity have become public health problems not only in Brazil, but worldwide, and are relevant concerns, as they lead to health risks and limitations on quality of life\(^10\). Obesity is even more serious among children, because if they do not receive adequate care, this situation will perpetuate and they will probably become obese adults\(^11\).

Worldwide, it is estimated that 40 to 50 million children in developed and developing countries are overweight or obese\(^12\). In Brazil, one in three children aged 5 to 9 years is overweight, and, overall, 33.5% of children at this age are obese\(^13\).

Care of children with overweight and obesity is a concern and a challenge for health professionals. This is because childhood is a phase in which the person does not easily understand the need to develop healthy life habits, especially if there is no effective participation and encouragement from the family\(^14\).

To support this specific population in their health needs, PHC is highlighted for its important role in health surveillance actions, with health promotion and disease prevention activities, such as the monitoring of specific groups, like children with obesity\(^15\). PHC professionals are advised to discuss obesity and the means to control its epidemic. However, approaches to prevention and treatment are limited\(^16\).

Nurses are essential in this scenario, as this professional category has care as its core purpose since the end of the twentieth century\(^10\). At the same time, they are in an ideal position to properly assess, diagnose and treat obesity in children\(^11\). Therefore, nurses’ knowledge needs to be based on theoretical, philosophical and technological principles, so that they can provide adequate care with the objective of achieving well-being\(^17\). However, the theories are considered abstract and without practical application. Thus, the development of a theoretical care model enhances the potential of nurses, who can use the theory to develop critical thinking and make decisions that will improve the quality of care\(^18\).

**OBJECTIVES**

To describe a theoretical model of nursing care for children with obesity in Primary Health Care.

**METHODS**

**Ethical aspects**

The norms of Resolution 466/2012 of the National Health Council, which approves the guidelines and regulatory standards for research involving human subjects, were adopted. The research was approved by the Research Ethics Committee of UFRN. Confidentiality and anonymity were guaranteed for all participants.

**Type of Study**

Qualitative study using the Grounded Theory\(^14\) to explain the phenomenon investigated and produce substantive theories. The study sought to understand processes, experiences, feelings, barriers, meanings attributed to the phenomenon and opinions involved in human meanings, which cannot be quantitatively measured.

For these reasons, a qualitative, exploratory and descriptive social research was conducted, using as philosophical framework the principles of Virginia Henderson, which serve to guide the practice while seeking to explain, describe, predict or prescribe nursing care\(^18\).

**Methodological procedure**

Data was collected from April to October 2015, through observations with dense and extensive descriptions and collection of personal reports of the research subjects. To answer the research question, the following initial question was used with the first sample group, composed of nurses: How do you experience nursing care of children with obesity and what meanings do you attribute to these care experiences?

Based on the speeches of this first sample group and on the hypotheses raised in data analysis, it was necessary to include other sample groups: caregivers of children with obesity, health service managers and a group of health professionals, which included physical trainers, nutritionists and physicians.

The interviews were recorded on a mobile phone and then transcribed by the main researcher and by previously trained scholarship fellows. At the end of the transcriptions, the interviews were sent to the participants by e-mail, so they could read and authorize their use.

In addition, throughout the research, the researcher produced memos with perceptions about the speeches, as well as preliminary notes about the codes and comparisons or any other idea that occurred about the data collected, with the objective of helping the data analysis. The memos were used as a tool to compare data, explore ideas about codes, and direct subsequent data collection\(^18\).

Participants were selected according to theoretical saturation, as in the literature consulted\(^17\), so the number of subjects was not previously determined. According to the analysis of memos, diagrams and interviews, it was necessary to include new subjects until reaching theoretical saturation. Thus, when the categories no longer had space to develop new concepts, it was considered that the researcher achieved dense and well-defined properties.

Data analysis and data collection occurred simultaneously. Thus, data was read and the main ideas and first impressions of the speeches were highlighted. With a dynamic and fluid process, open coding of the data was initiated, with the objective of discovering concepts. The next step within open coding was to group incidents into preliminary concepts according to their similarities and differences.

After obtaining the preliminary concepts, abstractions were created and then categories were formed. At this moment, the axial coding began and the categories emerged and were related to subcategories, which in turn were associated with a central core and with the categories, according to their properties and dimensions.
Naturally, while categories and subcategories were elaborated, associations between them and the components of the paradigm emerged. This paradigm corresponds to a system that helped sorting and grouping data systematically. This initial axial coding process began in the first interview, with the observation of the concepts and of the relationship between them, then continued with the emergence of categories, the relationships with the subcategories, and the perception of their conditions (actions/interactions) and consequences.

After the analysis of the first interviews with the nurses, hypotheses were raised and gave rise to the need for other sample groups, due to the lack of refinement of the categories. Thus, the present research included the participation of the following groups: a first group consisting of 11 nurses from PHC; a second group consisting of four caregivers of children with obesity; a third group consisting of four health managers of the city; and a fourth group consisting of five health professionals.

The analyst was responsible for integrating and refining the categories in the selective coding step, based on the analysis of records and memos. In the end, 73 diagrams and 58 memos were constructed.

The central category was determined through a process of abstraction and association between categories, which brought together the products of the analysis and transcribed them in one sentence that represented an apparent explanation for the phenomenon, the conceptual essence of the research.

The paradigmatic or conditional/consequence model was developed according to the relationships between categories. A professional graphic designer diagrammed the model proposed by the researcher to better represent the substantive theory reached throughout this process of integration, refinement, comparison and questioning of codes, categories and subcategories related to the meanings of the nursing care process for children with obesity in PHC.

After the construction of the theoretical model, it went through the “validation” process, which ended the data analysis phase. The constructed theoretical model was presented to five validators, of which two were specialists in childhood obesity, two were nurses participating in this research and one was a specialist in GT.

**Study setting**

The study was developed in six Family Health Teams of four Basic Health Units (UBS), and a Specialized Service (SE) in the treatment of childhood obesity (Child Obesity Center – COC), in the PHC of Campina Grande, in the state of Paraíba, Brazil. The city was selected for the study due to the existence of the COI, a public service that included the nurse in the multidisciplinary team. It is worth noting that, in the year of data collection, the city of Campina Grande was the only city in the state of Paraíba that had a public service specialized in the treatment of obesity and associated diseases, specifically directed to children and adolescents, in this case, the COC. The definition of children considered the age group adopted by the World Organization Health, from zero to 9 complete years.

**RESULTS**

This study allowed us to immerse in the feelings, perceptions and experiences of nurses in the care of children with obesity in PHC. The meanings constructed in relation to nursing care for children with obesity were based on the relationship between and reflection on the concepts raised in the interviews. Thus, six concepts (categories) and their subcategories (properties) – elements that qualify the concept – were elaborated.

**Chart 1 - Presenting the categories, subcategories and discourse of the participants**

<table>
<thead>
<tr>
<th>CATEGORIES</th>
<th>SUBCATEGORIES</th>
<th>DISCOURSES</th>
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<tbody>
<tr>
<td>1. Identifying processes that lead to discontinuity of care of children with obesity in health facilities</td>
<td>Discovering weaknesses in management directed at structuring nursing care for children with obesity in PHC; Limiting nursing care for children with obesity due to insufficient human resources and lack of training; and revealing the organization of the work process based on the biomedical model</td>
<td>“There must be team that makes it work, but in my team, it is still very difficult... because obesity should be treated as hypertension is, we know, we keep records, we understand, we care, we go after people, we are always following up.” (E02); “I am working in FHC for 16 years and I have never heard of a nurse attending healthy older children [...]” (G01)</td>
</tr>
<tr>
<td>2. Characterizing the fragility of care shared by parents and health professionals in the care of children with obesity</td>
<td>Receiving influence of cultural, socioeconomic and psychological factors in food choices; Seeing maternal absence as a potentiator of childhood obesity; Reconstructing the vicious circle: parent’s habits being reproduced by their children; Facing difficulties to establish partnerships between professionals and family members in the care of children with obesity; and (un)knowing childhood obesity as a disease</td>
<td>“When I talk about customs, I mean the custom of taking the easy route... It takes time, and nobody has the time to worry about this...” (E02); “[...] When the mother is not home, she takes the opportunity. The father is always there facilitating.” (PS04); “[...] Sometimes, the obstacle can be something basic, as when the family does not believe in the process, or gives up on the child... because the mother herself believes that the child will lose weight later.” (E04)</td>
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<tr>
<td>3. Interacting with the multi-professional team in care</td>
<td>Maintaining a relationship with the multi-professional and multidisciplinary work in the care of children with obesity; and having a specialized center for the care of children with obesity</td>
<td>“[...] That’s why multi-professional work is important... It’s been a long time since we understood that none of us are so good as all of us together...” (E08)</td>
</tr>
<tr>
<td>4. Glimpsing new possibilities for nursing care</td>
<td>Supporting the UBS as the gateway to the care of children with obesity: Breaking the boundaries of the UBSF to find and follow-up children with obesity; Establishing bonds with families for the care of children with obesity; Thinking of alternatives to take care of children with obesity; and designing the systematized care through intervention projects</td>
<td>“When patients arrive at the unit, they first go through the Nurse(...) initially, when the user arrives, when they look for us, they go directly to the nurse(...)” (PS03); “[...] In order for nurses to look at the entire life cycle of the child, from 0 to 11 years of age, we would need to have a systematization, because if we do not, the child does not go to the nurse(...)” (G01)</td>
</tr>
</tbody>
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To be continued
Thus, in a didactic presentation, the discourses, categories and their subcategories are shown in Chart 1, with the codes of the categories represented, aiming to demonstrate the largest possible number of data generated from the interviews and to avoid an extensive number of citations from the participants’ discourses.

After constructing the categories, their properties and dimensions, which were developed deeply at a conceptual level, a central concept was elaborated: “Nurses worrying about the care of children with obesity as a neglected area in Primary Health Care”. The central concept relates all of the six concepts (categories presented in Chart 1) and explains and describes the phenomenon of nursing care for children with obesity.

The representation of the contexts in which the child is inserted and influenced in relation to weight gain is shown in the model as the school, the residence, the family, the church, and the places where the child receives nursing care, represented by the PHC and the Pastoral da Criança. Virtual environments also represent contexts in which the children experience and are influenced by obesogenic environments. Higher education institutions represent the positive influences they can have on children through teaching, research and extension programs.

The substantive theory named “Nurses worrying about the care of children with obesity as a neglected area in Primary Health Care” has the objective of supporting nursing practice in relation to childhood obesity care, strengthening health actions for prevention, treatment and rehabilitation of children with obesity and raising awareness among all those involved in this process to end the neglect and to become facilitators of care to this specific population, sharing responsibilities.

Nursing care for children with obesity occurs within a context in PHC that needs a lot of restructuring. The facts and situations associated with nursing care for children with obesity as neglected areas in PHC are represented by the concepts of category 5, Moving through nursing care settings. It is important to realize that nurses work in the care of children with obesity in an arbitrary manner and with little physical, theoretical or material resources. The context in which nurses are inserted to provide qualified care makes it difficult to go beyond what is already done.

Figure 1 - Theoretical model ‘Nurses worrying about the care of children with obesity as a neglected area in Primary Health Care’
Stimulating physical activity part of the work of the nurse in the care of children with obesity; however, the context in which the children live limits the possibilities of physical activity, as the population of the units researched live in areas without infrastructure, squares or places that allow physical exercises, such as multi-sports courts, public gyms and cycling or walking paths. Thus, the context of nursing care for children with obesity in PHC includes health managers, whether they are global, national, state or municipal, and nurses without plans regarding the situation in which they work, who must develop actions against obesity in childhood.

Causal conditions reflect the experiences of PHC nurses in caring for children with obesity. Causes are presented as incidents or events that influence neglected concerns in relation to the phenomenon studied. Thus, the research category that addresses causal conditions is 1: Identifying processes that lead to discontinuity of care of children with obesity in health facilities.

Participants suggested that care was incipient and, moreover, that they faced barriers that limited their actions even more. Given the weaknesses in health management planning, which does not highlight the problem of childhood obesity, causes or events that contribute to neglect in the care of children with obesity include: lack of human resources, such as specialized professionals; the presence of specific treatment centers for referral; few family health support centers available or integrated with PHC; the low number of nurses to care for the entire population, generating work overload; the inflexibility of schedules for the inclusion of childhood obesity; lack of training; predominance of the biomedical model, among others.

The intervening conditions are represented by category 3: Interacting with the multi-professional team in care. In this case, the category represents a positive influence on the neglected concerns in relation to nursing care for the children with obesity. However, interaction with the multi-professional team was demonstrated as something unfeasible, considering that the number of professionals is not enough and access to health services is precarious, and that to provide an effective nursing care for children with obesity the multi-professional and multi-disciplinary team must share responsibilities.

Parents shared the same idea when they described multi-professional work as an incentive to stay in the treatment for obesity in the family. Thus, sharing the responsibility of caring for these children with a multi-professional team and assisting them individually has high potential in the economic and social reality of the family and an impact on the family’s response to childhood obesity care.

In category 2, “Characterizing the fragility of care shared by parents and health professionals in the care of children with obesity”, the difficult of parents to participate as caregivers of the child was identified as a reflection of the lack of involvement of managers and health professionals in raising awareness about the problem of childhood obesity.

It is believed that if health professionals and managers put more effort into obesity care for the family, parents would not resist so strongly the suggested changes. Those involved would be striving to develop a new food culture. This change in eating habits and lifestyle is time-consuming and may not be adopted in the short term. Thus, it requires persistence and understanding from health professionals. It is necessary to understand this moment of parents, since adopting a new lifestyle can be something stressful and tiring for parents and can lead to tension and stress in the family, requiring humane care with adaptations and tolerance with potential failures.

The categories that respond to the strategies that were adopted by the participants to address the phenomenon represent the actions/interactions. Thus, categories 4 and 6: “Glimpsing new possibilities for nursing care” and “Addressing the concern for new nursing care processes” are the means used by nurses and participants to deal with the neglected concern regarding nursing care for children with obesity in PHC.

In the midst of neglect, there are signs that there is concern for this population, and that some actions are being taken by nurses to provide care to them. These actions include: having a first contact with the population; facilitating the process of finding children over two years old; leaving the space of the Basic Units and caring for the children in the environments where they spend most of the day, such as school and households; finding children at risk of obesity or already overweight through the federal government’s social programs; establishing bonds with families and partnerships with HEIs, promoting preventive work with pregnant women and mothers; using nursing consultations to address childhood obesity; guiding and accompanying families with obesity.

Regarding the validation of the model, it was accepted and considered adequate to represent nursing care for children with obesity in PHC. However, some modifications were suggested and accepted. Then, changes that were consistent with the concepts elaborated from the gross data were made. The contributions were valuable and helped enhancing the content of the theoretical model, increasing confidence on the accuracy of the information and confirming that it is a faithful depiction of the nurse’s practice in the care of children with obesity, according to the following discourse:

It is possible to see all the actors involved, including the nurse who neglects the problem. The model can definitely represent the context in which the child with obesity is inserted and the nursing care. (V01)

DISCUSSION

The categories and subcategories that emerged from the data describe the relational aspects of childhood obesity and their meanings for nurses in a dynamic and interrelated manner. Their relationships and connections converge to a central concept: Nurses worrying about the care of children with obesity as a neglected area in primary health care.

It is noticed that the nurse is part of a care system organized to meet certain health needs of the population; when these professionals strive to include the care of children with obesity in their care dynamics in PHC, in an attempt to address the instincts seen as concerns, they face processes that prevent the flow of care for childhood obesity. Thus, nurse’s work with this population is still a glimpse of new perspectives to reach children with obesity. Therefore, it is difficult to move through settings characterized by lack of training and insufficient resources and health professionals who support this type of care. As a result of a disease which is in the background of health systems, parents of children with obesity have been neglecting their responsibility for this treatment.
The strategies to treat children with obesity include isolated actions to reduce weight and factors that influence behavior. To change habits, it is necessary to involve all caregivers. To provide quality care for children with obesity, it is necessary to have a comprehensive approach, seeing children as complete beings inserted in a social and economic context and surrounded by people with habits and customs that will influence these beings throughout their life. Childhood obesity cannot be seen as an independent and isolated issue, or as a biological and endocrine process. It is necessary to look at the multiple relationships and interrelationships that exist in this interactive and dependent process. Henderson instinctively understands the individual as a unique being influenced by relationships that may favor both disease and health.

Thus, the data indicate that to end the neglect in relation to care of children with obesity, it is necessary to go beyond the elaboration of primary care guidelines for orientation on obesity. A task force is needed: the Brazilian health system needs to monitor and take measures to curb the rise of obesity rates, as projections suggest that it will remain on the rise.

In order to reach children with obesity, it may be necessary to overcome structural, theoretical, material, instrumental and work overload problems. Nurses have advantages for addressing children's eating habits in PHC, as they are involved in child care in PHC. Furthermore, it is necessary to understand actions and responsibilities in order to promote health and prevent disease.

In order to achieve an optimum care, nurses must assimilate the specific knowledge of other professionals and promote comprehensive assistance. Nurses adapt well to the front line of health care, as they have an advanced understanding of the consequences associated with harm and because their profession is based on the science and art of care, and this action is about comprehensiveness.

The share of responsibility of parents and caregivers in the care of children with obesity was the most evident difficulty in this process. However, it can be considered a reflection of the absence of managers and health professionals in this process. This means that a greater mobilization of those who are interested in reversing the obesity scenario in Brazil can make families understand the message and initiate a process of behavioral changes. Parents expect their children to lose weight when they perceive obesity in childhood, but the path to this end is still confusing for parents, due to the misunderstanding of what is good and healthy.

According to the philosopher, to make a healthy man, you need to start with their grandfather, which reinforces the idea of including family members and caregivers in the search for changing paradigms in the population.

Thus, children with obesity require shared care and, given the depth of the meanings attributed to care for this patient, integration between those involved requires commitment and dedication from all. Achieving practical and real results is essential to have an impact on childhood obesity rates worldwide and in Brazil and to reduce the number of chronic patients, which is related to obesity since childhood. Acting in a resolute and effective manner in the care of children with obesity requires nurses to have a solid knowledge of theories and philosophies of their profession, and this is also the starting point to enhance professional capacity.

**Study Limitations**

The study has as limitation addressing only the experience of one referral center in childhood obesity with one nurse integrating the care team. In addition, mothers' short time to provide interviews with obese children, in order to hear them, about their perspectives of nursing care in which they are inserted.

**Contributions to the area of Nursing**

The substantive theory, named the Nurse worrying about the care of children with obesity as a neglected area in PHC, proposes to serve as a basis for the practice of nurses in child obesity care. And, equally, to strengthen health actions for prevention, treatment and rehabilitation of children with obesity, and also to awaken all those involved in this process to stop negligence and walk as facilitators of care to this specific population, sharing responsibilities.

**FINAL CONSIDERATIONS**

Through this research, it was possible to reveal a set of data, to develop concepts and to elaborate a theoretical model about the nursing practices in the care of children with obesity. The model was reached through the phenomenon of nurses worrying about the care of children with obesity as a neglected area in Primary Health Care. In addition, to understand the meanings that nurses attribute to the process of caring for children with obesity, a substantive theory on the phenomenon was developed.

Understanding nursing care for children with obesity as a neglected health concern in Brazil, it was possible to perceive that the phenomenon is related to the individuality of nursing care and the need for shared responsibilities. Thus, the concern reaches other aspects of the process, such as other health professionals, national and global health managers, family members and caregivers of children with obesity.

The theoretical model was validated and recognized as reliable and representative of the current panorama of nursing care for children with obesity. It also helps nurses to understand the social contexts in which children are inserted, to make decisions to systematize intervention projects, and to comprehend the complex process of interrelationships, where nurses work together with the team and have specific attributions that can end the fragility of the co-responsibility of parents, aggregate health professionals and strengthen the planning of actions to reduce the rates of childhood obesity.

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