Activities of university extension for transfer of knowledge about child development in day care centers: report of experience

Ações de extensão universitária para translação do conhecimento sobre desenvolvimento infantil em creches: relato de experiência

Acciones de extensión universitaria para translación del conocimiento acerca del desarrollo infantil en guarderías: relato de experiencia

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ABSTRACT

Objective: To report the experience of students and teachers of a university extension project in the planning and performance of educational workshops on child development with educators of a day care center. Method: Report of experience based on frameworks of The Irreducible Needs of Children and the Bioecological Theory of Human Development. Results: The workshops included eight undergraduate students, two nursing professors from a public university and 24 educators from a day care center located in a region of high social vulnerability in São Paulo. The educational workshops promoted child development in the day care center and the following themes were addressed: child development fundamentals, developmental milestones in the personal and social areas, language, fine and gross motor coordination. Interactive dynamics, didactic games and media resources were used as pedagogical strategies. The educational workshops favored the transfer of knowledge on child development and irreducible needs of children Conclusion: Extension activities provided a link between the university and the community through the sharing of knowledge among health and education professionals aimed at promoting child development.

DESCRIPTORS
Child Development; Child Day Care Centers; Health Education; Child Health; Pediatric Nursing.
INTRODUCTION

Investment in early childhood development actions should be a priority in all countries, as the early years of life represent a unique window of opportunities for individuals becoming productive members of society in the future and break cycles of poverty and inequality(1). In Brazil, the Legal Framework for Early Childhood(2) recognizes children as the priority in the formulation of public policies, development of programs and especially the training of professionals aimed at promoting the development of children from birth to six years of age. This federal law also establishes that the Union will seek adherence of States, the Federal District and Municipalities for an intersectoral approach by coordinating Health and Education sectors for example, in the fulfillment of children’s rights in the early childhood(3).

Early childhood development actions have the potential to compensate for adversity arising from poverty, neglect, abandonment and violence by providing children with more opportunities for learning, physical growth and good health(4). In 2017, 3,406,796 of Brazilian children under three years of age were enrolled in day care centers, of which 65% attended federal, state or municipal nursery schools(5). In this sense, day care centers represent privileged spaces for the promotion of child development and offer valuable opportunities for the promotion of physical, social, emotional and cognitive well-being of children in the first three years of life(6).

Considering the influence of contextual factors on child development in the first years of life, a study(7) revealed that 52.7% of children aged between six and 18 months attending day care centers presented unfavorable changes in their development, especially in skills and abilities related to language and personal-social development. These findings were more frequent among children attending day care centers without the support of health professionals (as those of the Family Health Strategy). Similarly, a study(8) conducted with 116 children younger than four years old showed that the cognitive, fine and gross motor performance results of children attending public day care centers were lower compared to children of the same economic class attending private day care centers. The evidence demonstrates the role of contextual elements possibly related to the quality of care in day care centers in children’s development during their first years of life.

The gap between knowledge production and actions of health promotion and disease prevention is a concern of researchers and healthcare professionals(9). The transfer of knowledge is an interactive process of synthesis, dissemination, exchange and ethical application of knowledge for the improvement of health care(10). This is an important process for the development of new interventions as it helps to apply science in practice by testing its feasibility and acceptance(10).

In this context, “university extension represents an educational, cultural and scientific process in which teaching and research are articulated in an inseparable way and promotes a transformative relationship between University and society”(11). The aim of university extension actions on child development (addressed in this study) was to sensitize educators through educational workshops, where the opportunity to build a horizontal relationship between participants was provided. In turn, they represented a strategy of continuing education(12) structured from the work process needs of teachers in day care centers and university health professionals, and were developed in a critical-reflexive process among participants.

The literature(13-12) related to university extension activities articulating the different knowledge from health and education areas in the transfer of knowledge about child development is scarce. Therefore, the objective of this study was to report the experience of students and teachers of a university extension project in the planning and performance of educational workshops on child development with day care educators.

METHOD

STUDY DESIGN

This is a report of experience about the planning and performance of educational workshops on child development by Nursing teachers and students with day care educators.

SCENARIO

The study site was a nursery school located in a region of high social vulnerability in the south of São Paulo (SP) that serves approximately 220 children aged between zero to three years old, Monday to Friday, from 8 to 17 hours. The day care center is part of the São Paulo City Hall and belongs to a philanthropic care center consisting of a health clinic, a preschool and a youth center. The health clinic professionals offer care to the population, but do not perform continuing education activities aimed at education professionals.

The day care center has 24 educators distributed in the nine following classrooms: one room for children under one year of age; three rooms for children aged between one and two years; three rooms for children aged between two and three years; and two rooms for children aged between three years and three years and 11 months. Once a month, teachers participate in training activities offered by the São Paulo City Hall. The training meetings are conducted by educational professionals linked to a non-governmental organization with the objective of contributing to the quality of pedagogical practice in public early childhood education.

DATA COLLECTION

The planning and performance of workshops on child development were held on Tuesdays in October and November 2017. There were four meetings in a total workload of 12 hours. At this step, the objectives were: a) to improve the knowledge of extension course students on child development; b) to raise topics to be addressed according to the needs previously identified with educators; c) to develop pedagogical strategies for addressing the themes of each educational workshop. The educational workshops were held at the day care centers during teachers’ work day.
Although educators participate regularly in training meetings, the coordination of the nursery school expressed the demand for extension actions for the articulation of Health and Education sectors with the aim to address the fundamental aspects of child development, and the developmental milestones of children aged between one and 36 months. Considering the need for intersectoral activities in response to a perceived knowledge gap, workshops were planned by two day care educators, two university teachers and eight undergraduate students attending the 2nd and 3rd year of the undergraduate Nursing course (one of them was under a scholarship of the extension project).

In order to avoid disrupting the routine, the 24 educators were split into two groups.

The workshops lasted between 30 and 45 minutes and were structured in four moments: integration dynamics, knowledge sharing, learning dynamics and closure. The structure of workshops was based on elements of continuing education, such as “needs of the work process and the critical process as part of work through educational actions aimed at transforming professional practices and the organization of work itself”[10].

The technical framework adopted materials from the Ministry of Health, such as the Child Health Booklet and videos on the three fundamental concepts about early childhood development of the Center on the Developing Child (Harvard University) that was translated and adapted into Portuguese by the Science for the Childhood Center, Maria Cecília Souto Vidigal Foundation, Faculty of Medicine, Universidade de São Paulo (USP), Insper Institute of Education and Research and David Rockefeller Center for Latin American Studies.

In addition, the development of educational workshops was based on theoretical frameworks[11-15] of Irreducible Needs of Children and the Bioecological Theory of Human Development that were both studied in depth by Brazilian Nursing authors[14,16].

In the framework of Irreducible Needs of Children, such needs are related to the survival and development of individuals regardless of ethnic origin, social class, physical or mental condition[13]. The authors define six groups of essential needs: “continuous supportive relationships; physical protection, security and regulation; experiences that respect individual differences; appropriate experiences to development; establishment of limits, organization and expectations; and stable, supportive communities of cultural continuity”[13]. The experiences and types of basic care around which families, education, care and social security, judiciary and health care systems should organize themselves are based on this set of needs[13-14].

The theory of Irreducible Needs of Children is broadly related with components of the Biocological Theory of Human Development, which defines development as a process of changes and continuity of individuals' biopsychological characteristics in the course of life and generations as a function of four elements interacting with each other, namely: the process, the person, the context and the time[14-15].

The process element refers to reciprocal interactions between the developing person and other people, objects and symbols of their immediate environment. This theory states that people are active in their development and interact with the context according to their biopsychosocial characteristics. The context element represents any event or condition outside the organism that potentially influences or is influenced by the developing being. The time element or chronosystem, is the structure involving the changes and stabilities of human development, such as individuals and groups in the course of life and generations[15].

The concept of human development adopted in this study considered “the development of children a fundamental part of human development, an active and unique process of each child expressed by continuity and changes in motor, cognitive, psychosocial and language skills with progressively more complex acquisitions in functions of daily life and exercise of their social role”. According to this concept, child development is influenced by factors related to pregnancy(exposure to environmental pollutants, use of drugs, alcohol, tobacco and other drugs, maternal nutrition and health), aspects of the child (prematurity, low birth weight, growth and diseases), aspects of child care (maternal health, parents’ cognitive development, bonding, parental interaction with the child, characteristics of the environment, exposure to domestic violence and professional intervention) and socioeconomic conditions[16].

In the choice of theoretical references, the specificities of the developing subject were considered by aiming integral healthcare and education actions in the interface of the day care with human development.

The workshops are part of the university extension project developed since 2016 called “Promotion of Children’s Health: extension to reach the millennium goals” of a nursing school of a federal public university of São Paulo/SP. As this is a report of experience by the authors, approval from the Research Ethics Committee was not necessary.

In total, 24 educators, eight undergraduate extension students and two teachers from a nursing school participated in educational workshops on child development in a day care center.

The educators were female (100%), 85% held a Pedagogy degree, and the others had a Teaching Degree in Primary Teaching and 15 years of experience, on average. In relation to undergraduate Nursing students, 100% were female, 62.5% were attending the fourth semester of the course, and the rest were in the sixth semester. These students had been in the extension project for at least six months and had previously participated in theoretical and practical activities.
aimed at monitoring the development of children under three years of age. Undergraduate students of the sixth semester had taken a discipline on Nursing in the promotion of children's health with a theoretical and practical workload of more than 100 hours held in a nursery school and health clinic. Nursing teachers encouraged the participation of both educators and undergraduate students, which stimulates the critical capacity and fosters actions of articulation between the University and the demands of society.

The initial stage of the university extension action involved the planning of educational workshops, as shown in Chart 1. The theme of the first educational workshop was the concept of child development and the factors that influence it. The second and third workshops addressed aspects related to the emotional, social, language and motor development of the child, including the developmental milestones of children under three years of age stated in the Child Health Booklet, the factors influencing them, and the strategies for their promotion by considering the educators' performance in the day care center. The fourth workshop addressed child care and education practices in the day care center, such as food, sleep and rest, body hygiene, play, and the importance of these practices for the promotion of child development.

**Chart 1 – Planning of educational workshops on promotion of child development and articulation with theoretical frameworks – São Paulo, SP, Brazil, 2017.**

| Workshop | Integration dynamics (5 min) | Knowledge sharing (15 min) | Learning dynamics (15 min) | Closure (5 min) | Bioecological Theory of Human Development | Irreducible Needs of Children |
|----------|-----------------------------|---------------------------|--------------------------|----------------|----------------------------------------|-------------------------------|
| 1st workshop | Memorizing names. | Theme: Fundamentals of child development. | The traffic light game. | Circle of massage | The concept of child development and the influence of factors related to pregnancy, the interaction between genetic inheritance and the child's experiences by considering their family, the community where they live, the time and socioeconomic conditions representative of the process, time and context elements. | Need for supportive and continuous relationships, and the need for stable, supportive communities of cultural continuity. |
| 2nd workshop | Vowel song | Theme: The personal-social, emotional and language development of the child. | The true or false game | Goodbye hug | The influence of the child's own aspects, such as behavior according to age, temper and health conditions, and aspects related to child care in the family and environment of early childhood education with emphasis on the role of bonding, interaction with adults and other children, and cultural habits representative of the process, person, time and context elements. | Need for supportive and continuous relationships; need for physical protection, security and regulation; need for experiences that respect individual differences; need for adequate experiences to the development. |
| 3rd workshop | Vowel song | Theme: The personal-social, emotional and language development of the child. | The true or false game | Goodbye hug | The influence of the child's own aspects, such as behavior according to age, temper and health conditions, and aspects related to child care in the family and environment of early childhood education with emphasis on the role of bonding, interaction with adults and other children, and cultural habits representative of the process, person, time and context elements. | Need for supportive and continuous relationships; need for physical protection, security and regulation; need for experiences that respect individual differences; need for adequate experiences to the development. |
| 4th workshop | Vowel song | Theme: The fine and gross motor development of the child. | Construction of a timeline with images illustrating the developmental milestones | The goodbye farewell | The character of continuous and progressive complexity related to the development of motor skills and competences representative of the process, person and context elements. | Need to establish limits, organization and expectations; need for experiences that respect individual differences; and need for physical protection and safety. |
| 5th workshop | Vowel song | Theme: The fine and gross motor development of the child. | The selection of sentences for conversations about care and education practices in the nursery. | Dynamics of the word | The daily care of the child in the nursery and its importance in the promotion of development, representative of the process, context and time elements. | The need for supportive and continuous relationships; and need for physical protection and safety. |
The aim of activities in dynamics of integration was to facilitate the interaction between participants and start the theme approached in each workshop. The first activity was called ‘memorizing names’, and participants were organized in a circle, invited to say their own names and that of the colleagues who preceded them, thereby exercising their memory. In the ‘vowel song’ activity, participants spoke the vowels of their own names by singing them to the rhythm of a rattle and practiced both memory and language skills. The third workshop was called ‘vowel stretching’; participants made a circle and were supposed to symbolize the vowels by performing body stretching movements, thereby exercising their motor skills. In the ‘dynamics of trust’, participants were divided into pairs, where one could not speak and the other would be blindfolded. The pair should walk around the room by helping each other with the aim to establish trust and collaboration among participants. The aim of this activity was to highlight the importance of teamwork during the educators’ routine in the nursery school.

The sharing of knowledge occurred in a dialogic way by using media resources. The idea was to articulate the knowledge and experiences of educators and extension Nursing students about the concept of child development, the factors influencing it, developmental milestones and the strategies of promotion supported by theoretical references.

In the learning dynamics, participants were involved in sharing experiences that demonstrated the importance of supportive and continuous relationships between the educator and the child, the family role and the impact of the life context on child development. Aspects related to characteristics of the territory where families live, especially the freedom to play in public spaces and some situations of risk for the physical and psychological protection of the child in the family context were discussed among participants.

The contributions of this step included reflecting on child care practices in the day care center by valuing moments of exchanging looks, talking in a soft voice and gentle touch during diaper changes, which represent moments of individual care. The opportunities to touch the food and take it to the mouth by practicing autonomy, as well as the respect to the rhythm and necessity of each child during meals were discussed in relation to the development characteristics of each age group. Educators emphasized the importance of recreational play in the day care center and the need for greater dialogue with children’s families by encouraging home care that ensures play, good nutrition, hygiene and affection.

In this step, educational games and plays were used to address the theme of each workshop. The aim of the traffic light game in the first workshop was to stimulate educators to identify their knowledge needs on fundamentals of child development. In this game, educators were invited to identify topics of their interest for the next meetings. Each theme was written on a paper and deposited by the educator in red, yellow or green cardboard boxes. The red box represented urgency, the yellow box, attention, and the green box represented knowledge regarding a certain theme. The themes identified by educators in the yellow and red boxes were related to the behaviors and skills expected for each age and the signs of developmental delay. The environmental influence on the child’s development, especially the role of playing and the importance of the day care, were in the green box.

In the second workshop, the true or false game brought images and phrases about the characteristics of emotional, personal-social and language development in the first three years of life. As for emotional and personal-social development, experiences were shared about the role of affection and bonding between educators and children, of children’s autonomy to get dressed, eat, take care of their body hygiene, and about playing and social skills of children according to their age. The developmental milestones of the personal-social area and language were addressed through illustrations and phrases that were judged as true or false.

In the third workshop, participants constructed a timeline with pictures showing the developmental milestones in the fine and gross motor areas. In this meeting, the care of the child with signs of developmental delay and special needs in the day care center was discussed by highlighting the challenging and important role of the educator in meeting their emotional and physical protection needs. In the last workshop, the dynamics involved a selection of sentences about the needs of affection and emotional safety, feeding, sleep and rest of the child, oral hygiene and plays. Following the selection of each sentence, participants discussed the practices in the day care center and highlighted the importance of providing opportunities for children exploring food and having the support of an adult in moments of body hygiene, sleep, rest and play.

The closure dynamics aimed to promote the final reflection on the theme and thank the opportunity of each meeting. In the first meeting, participants were invited to perform a shoulder massage on the colleague by their side. In the second and third workshops, participants said goodbye by hugging or waving at the colleagues by their side. In the last workshop, each participant chose a word that represented their experience throughout the workshops and shared with the group.

Students of extension courses and nursery educators participated with enthusiasm and interest in learning about the conceptual aspects and strategies for promoting child development. Facilitating aspects and barriers related to the university extension action were identified. Aspects such as the relevance of the theme, the good relationship and the previously established partnership between educators and Nursing teachers were facilitating aspects of the educational workshops. The enthusiasm and motivation of extension students together with previous experiences in theoretical-practical activities were also facilitators for students playing their roles as protagonists in the conduction of workshops with the support from Nursing teachers. The barriers involved the lack of financial support for the transportation of students and teachers of the extension course, and for acquisition of materials used in the development of group dynamics, video projection and reproduction of educational materials shared with educators, such as the child development surveillance.
instrument of the Child Health Booklet.

Despite the perceived barriers, educational workshops represented an opportunity for mutual collaboration in the professional training of nurses and educators. The experience allowed the critical reflection of nursing undergraduates and teachers on the importance of intersectoral actions that articulate teaching, research and extension courses in response to demands of society. In addition, the challenge of addressing a complex issue such as human development in a limited space of time (30 to 45 minutes) through interactive dynamics, and games developed by extension students was a source of learning about the process of developing teaching participatory strategies. This experience was a rewarding opportunity for dissemination and exchange of knowledge that potentially favored the quality of child care in the day care center.

DISCUSSION

The university extension activities enabled the transfer of knowledge about child development through the dissemination and exchange of knowledge between Nursing professionals and childhood educators participating in educational workshops. The educational workshops mobilized participants towards seeking knowledge about child development, and reflected on child care practices in the day care center.

A similar experience was reported by psychologists of a university extension project in the state of Rio Grande do Sul, which aimed “to contribute to the improvement of the training of nursery and preschool educators”(17). The authors conducted workshops with 180 educators by addressing topics such as social, emotional, cognitive, motor and child language development; sensitivity in the educator-child interaction; emotional needs of children; individual differences in childhood; importance of initial interactions for child development; and family-nursery-educator relationships”(17).

The pedagogical strategies included “instructional training, video vignettes, and discussions between educators and psychologists”(17). The psychologists proposed an initial expository moment on the theme of each meeting(17). “The video vignettes were used for deepening the suggested theme and provoking discussions and reflections”(17).

Therefore, extension activities help the University social mission of articulation with the demands of society. However, higher education in Nursing, Pedagogy and Psychology courses have limitations in the development of teaching, research and extension activities focused on the transfer of knowledge about child development, particularly regarding the training of early childhood educators(11).

The role of Nursing stands out by strengthening intersectorality for promoting child development. Given the complexity of the topic, the experience of conducting educational workshops has raised the need to continue university extension activities aimed at educating health and early childhood professionals. In addition to promoting the dissemination and exchange of knowledge, future actions for transferring knowledge about child development should also provide opportunities for educators applying knowledge in child care in day care centers.

An innovative aspect of the present report of experience is related to the transfer of knowledge from an expanded concept of human development that considers “the influence of early childhood years as decisive in the interaction process between genetically inherited biopsychological characteristics and the experiences offered by the environment”(16). The role of preschool teachers and day care centers is fundamental, especially considering that “the reach of each child’s potential depends on responsive care to their essential needs”(16).

This experience report demonstrates that the care perspective that guides educators and nursing professionals in child development promotion has moved beyond biological aspects. Children’s social-emotional needs and the need for stable and supportive communities for families with young children, such as day care centers stand out. The adoption of theoretical frameworks is another relevant aspect that allowed to contemplate biological and maturational aspects of human development, aspects related to children, the time in which they live, and their life context in a territory of high social vulnerability.

Similarly, some studies(18-19) addressed expanded concepts of child development based on the Biocultural Theory of Human Development. In a study(18), the understanding of conceptions of premature newborns’ caregivers on child development was sought. It was found that families are concerned with the possibility of harming the current and future development of the person/child defined as fragile due to the premature birth (Time dimension), which is minimized by the scope of observable skills, such as motor skills. The Context, especially the family and health services, and the proximal Processes described by unidirectional interactions of caregivers are considered developmental determinants. In another study, the aim was “to know the experiences and expectations of mothers of preterm newborns hospitalized in neonatal intensive care units, and it revealed that maternal perception about the intensive care unit, representative of the element context of this theory, was of an environment of care and attention, clean and organized, but representative of sadness and concern”(19).

Although the theoretical reference of the Irreducible Needs of Children offers a singular understanding of the needs according to children's specifics and their development process, this reference is little known in health and education areas, and literature on the theme is scarce(14,20).

Corroborating our experience in the adoption of this reference, in a study, the aim was “to characterize maternal care to children aged under one year for the promotion of child safety at home”(20). In line with the topics covered in the educational workshops of the present study, the results of the other study revealed the following as essential elements for child care in the first years of life: the presence and involvement of parents with love in the daily care of the child, the value of aspects such as hygiene, feeding, prevention of diseases and accidents, and their importance for the physical protection of the child, the role of interaction between adults and children, and appropriate experiences to the child’s age, including plays and interactions, the need to establish limits...
and the difficulty to build these limits and not overprotect the child. In addition to the importance of a support network including professionals from the public sector of Health, Education and Social Services. Similar to our report, the evidence generated broadens the understanding about child care in the promotion of child health by highlighting the importance of continuous supportive relationships, physical protection and safety, respect for individual differences, adequate developmental experiences, setting of limits and building stable and supportive social networks. 

The limitation of the present study is to report the experience only from the perspective of three Nursing students and teachers. Future studies should express the experience of all participants, even if this means coordinating more than 30 people in the development of evidence for the practice.

CONCLUSION

The extension activities established a link between the university and the community through the sharing of knowledge among health and education professionals with the aim of promoting child development. The educative workshops on child development allowed transferring scientific knowledge and contributed to the education of Nursing and early childhood education professionals involved in the care of children in their first years of life.

RESUMO

Objetivo: Relatar a experiência de estudantes e docentes de um projeto de extensão universitária no planejamento e realização de oficinas educativas sobre desenvolvimento infantil com educadoras de creche. Método: Relato de experiência alicerçado nos referenciais das Necessidades Essenciais das Crianças e na Teoria Bioecológica do Desenvolvimento Humano. Resultados: Participaram das oficinas oito graduandas, duas docentes de Enfermagem de uma universidade pública e 24 educadoras de uma creche localizada no município de São Paulo, em região de alta vulnerabilidade social. As oficinas educativas abordaram os temas: fundamentos do desenvolvimento infantil, marcos do desenvolvimento nas áreas pessoal e social, linguagem, motor fino e grosso e promoveram o desenvolvimento infantil na creche. Como estratégias pedagógicas, foram utilizadas dinâmicas interativas, jogos didáticos e recursos midiáticos. As oficinas educativas favoreceram a translação do conhecimento sobre o desenvolvimento infantil e as necessidades essenciais das crianças. Conclusão: As ações de extensão proporcionaram articulação entre a universidade e a comunidade por meio do compartilhamento de saberes entre profissionais da saúde e da educação visando à promoção do desenvolvimento infantil.

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