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Does Education and Training about the Developmental Care of Infants Based on Watson's Theory of Human Caring Help Orphanage Workers Satisfy the Emotional and Physical Needs of Institutionalized African Orphans up to the Age of Five?

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Abstract

Purpose: The aim of this research was to determine if education and training on the developmental care of infants, based on Watson's Theory of Human Caring, could help orphanage workers improve the emotional and physical development of institutionalized African orphans up to the age of 66 months.

Methods: Participants of this quasi-experimental, cross-sectional study included children living in six orphanages located in one African village. Participating orphanage workers received a 2-hour researcher developed training based on Watson's Theory of Human Caring. The effectiveness of the training was assessed via pre- and post-test caregiver responses to the Ages and Stages Questionnaire (ASQ-3), which measures children's communication, gross motor, fine motor, problem solving, and personal-social skills.

Findings: Results indicated significant benefits of the caretaker training for orphans of all age groups, across all sections of the ASQ-3.

Clinical Relevance: Nurses have unique opportunities to expand evidence-based pediatric practices into global communities. Nurse-led caregiver trainings in orphanages throughout the world may improve the conditions of orphaned children who have endured tragedies associated with abandonment and neglect. Results have important implications for orphans' physical and emotional well-being, quality of life, and abilities to become integrated, productive members of society.

Keywords: Emotional development; Nursing; Orphans; Theory of human caring

Introduction

Worldwide, an estimated 153 million children have been orphaned or abandoned [1]. Institutionalized orphans are at an increased risk for neglect-related issues that may impede emotional, cognitive, and physical development [1-4]. The signs of neglect include malnutrition, poor hygiene, below average height and weight, depression, defiance, or maladaptive coping [5]. The organizational structure of most orphanages, coupled with the lack of knowledge among caregivers, often prevents the development of nurturing, loving bonds that children need to develop cognitively, emotionally, and physically. Because a key to improving orphan care is the provision of adequate caregiver support [6], providing caregivers with the education and resources needed to foster relationships with orphans may improve children's cognitive, emotional, and physical development.

Purpose and Framework

Because nurses have unique opportunities to expand evidence-based pediatric practices into global communities, the purpose of this study was to explore the effects of a nurse-led educational intervention on the emotional and physical development of institutionalized orphans. The intervention was based on [7] Theory of Human Caring, which includes clinical caritas, transpersonal caring relationships, and caring moments. Clinical caritas describe a variety of factors, such as loving kindness, authenticity, and cultivation of spirituality, presence, creativity, and the creation of healing environments. Transpersonal caring relationships are those that move beyond the ego to a higher level of care that involves a moral commitment to human dignity, respect and love, inner harmony, authentic presence, intentionally helping those in need through action and presence, and genuine connections with others [8]. Finally, caring moments described heart-centered encounters with another person that involve meaningful, intentional, and authentic interactions.

Educational Intervention

The unique and culturally sensitive educational intervention was developed to educate and train orphan caregivers on children's developmental needs. The training included instruction on feeding, holding, sensory integration, growth and development, and attachment. Each of these topics aligned with the five developmental areas assessed by the ASQ-3, including gross and fine motor skills, problem-solving skills, personal-social skills, and communication skills. The training included four types of developmental skills activities (physical care, emotional care, communication, and problem-solving) that directly related to the five areas of the ASQ-3. The researcher developed lesson plan modules in a booklet form based on the Centers for Disease Control milestone moments and Ages and Stages learning activities. Additionally, laminated posters with pictures of these activities were provided to each orphanage. The educational intervention was developed and delivered by the researcher who has over twenty years of experience in maternal/child nursing care.

Motor Skills: The development of gross motor skills requires control of the larger muscles required for activities such as crawling, sitting, walking, and running. Fine motor skills describe one's ability to control the smaller muscles of the body required to perform activities such as writing or playing an instrument. The physical care component of the training included instruction on children's gross motor skills, fine motor skills, and sensory skills. Gross motor skill development consisted of orphan caretakers walking with orphans, providing balls for toddlers to kick and throw, and dancing. Fine motor skills development consisted of drawing and building towers with blocks.

Problem-Solving Skills: Cognitive and problem-solving skills are strongly linked to emotional development in children [1]. Orphans are often cognitively stunted due to poor emotional development; thus, this part of the training was aimed at cognitive, as well as emotional development. Emotional affection and love are critical to children's abilities to accomplish cognitive tasks and enjoy healthy psychological development.

The problem-solving section of the caregiver training provided education on children's cognitive skill development. To nurture cognitive development, caretakers taught toddlers to name pictures, animals, and body parts in books. Caretakers also hid objects under blankets and pillows and encouraged children to find them. In addition, caregivers worked on puzzles with children and asked them to name each shape and color.

Personal-Social Skills: There are many possible reasons for the emotional developmental problems observed in orphans. For example, understaffed orphanages may have an inadequate number of caregivers to tend to the needs of crying infants, or caregivers may simply be unaware of the importance of meeting a crying baby's needs. Unmet needs create a lack of sensory input that can result in emotional problems, such as attachment issues and social ineptness [3]. Thus, caregivers were trained to nurture orphans' personal-social skills via the emotional care section of the caregiver training, which addressed the development of orphans' personal and social skills, such as attachment and bonding. Caregivers were responsible for cuddling, talking to, and playing with the orphans during feeding and bathing. In addition, caregivers redirected bad behavior with brief timeouts, and rewarded good behavior with hugs, kisses, and praise.

Communication Skills: The communication development section focused on spoken language and body language. This section also emphasized cognitive and emotional development because of its emphasis on caregiver-child interaction. By encouraging them to interact with children in loving and nurturing ways, caregivers may simultaneously nurture communication, cognitive, and emotional skills.

During this section of the training, caregivers were taught strategies to enhance children's communication skills, including reading colorful books to them, mimicking sounds made by the children, using words that described feelings and emotions, talking, reading, or singing to children daily, and showing excitement when babies made sounds. Caregivers also asked children simple questions and encouraged them to respond with words instead of pointing.

Methods

Setting and Participants

The study sample included orphans up to the age of 66 months who were living in six orphanages located in one African village, Jinja Uganda. The specific location and orphanages were chosen because of connections with colleagues and their availability. The participants were divided between pretest (n = 121, 50%) and posttest (n = 122, 50%), and categorized into five groups: 1-13 months (n = 51, 21%), 14-26 months (n = 54, 22%), 27-39 months (n = 54, 22%), 40-52 months (n = 50, 21%), and 53-66 months (n = 34, 14%). The frequencies and percentages of the participants’ demographic characteristics are presented in (Table 1).

Demographic	N	%
Administration time of ASQ-R		
Pretest	121	50
Posttest	122	50
Age groups		
1-13 months	51	21
14-26 months	54	22
27-39 months	54	22
40-52 months	50	21
53-66 months	34	14

Table 1: Frequencies and Percentages of Demographic Characteristics.

Approximately 60 caregivers were involved in the caretaker training. All the caregivers were female, with an average age of 22 years old. Most of the caregivers had a sixth grade education.

Instrumentation

The tool used to measure orphans’ emotional and physical status was the ASQ-3 [9], which was designed to assess children’s development between the ages of 1 month and 66 months. The ASQ-3 was completed for each child by his or her caregiver in order to assess five variables of child development, including communication skills, gross motor skills, fine motor skills, problem solving skills, and personal-social skills. Responses were scored along a three-point Likert-like scale, including Not Yet (1), Sometimes (2), and Yes (3) [10].

Data Collection

Prior to the intervention, orphanage caregivers completed the ASQ-3 for each of the participating orphans. Within 1 week of the pre-test, caregivers participated in the educational intervention. Two months after the training, caregivers completed the ASQ-3 for each of the participating orphans again.

A total of 244 responses were received, including 122 orphans at pretest and 122 orphans at posttest. One participant was removed for incomplete data; thus, the final analyses were conducted on 243 observations. Orphans in the pre-test (n = 121, 50%) and post-test (n = 122, 50%) samples were approximately equally divided between five age groups: 1-13 months (n = 51, 21%), 14-26 months (n = 54, 22%), 27-39 months (n = 54, 22%), 40-52 months (n = 50, 21%), and 53-66 months (n = 34, 14%). Five multivariate analyses of variance (MANOVAs) were conducted to examine the differences in orphans’ communication skills, gross motor skills, fine motor skills, problem solving skills, and personal-social skills, before and after the caretaker training. One MANOVA was ran for each respective age cohort (1-13 months, 14-26 months, 27-39 months, 40-52 months, and 53-66 months).

Findings

Composite scores were generated for the five skills of the ASQ-3 by taking a sum of the corresponding six items in each scale. Possible scores for each of the five skills ranged from 0.00 to 60.00. Pre-test scores, post-test scores, and overall composite scores are reported in (Table 2). Results indicated significant benefits of the caretaker training for all age groups, and across all sections of the ASQ-3.

Continuous Variables	n	Min.	Max.	M	SD
Pretest Scores					
Communication skills	6	0	60	32.28	15.91
Gross motor skills	6	0	60	40.37	16.96
Fine motor skills	6	0	60	22.48	15.48
Problem solving skills	6	0	60	28.68	15.94
Personal social skills	6	0	60	39.59	15.09
Overall composite	10	10	90	43.06	16.68
Posttest Scores					
Communication skills	6	10	60	53.28	10.5
Gross motor skills	6	5	60	53.32	10.26
Fine motor skills	6	5	60	50.78	10.95
Problem solving skills	6	5	60	53.98	8.05
Personal social skills	6	5	60	54.75	9.6
Overall composite	10	10	100	46.72	15.34

Table 2: Descriptive Statistics of Continuous Variables.

Ages 1-13 Months: The results of the MANOVA indicated overall significance for orphans between the ages of 1 and 13 months ($F(5, 45) = 5.59, p < .001, \eta^2 = .383$). Individual ANOVAs were used to examine the effect of the caretaker training on each of the five skills. Results indicated significant differences in communication skills ($F(1, 49) = 13.91, p < .001, \eta^2 = .221$), gross motor skills ($F(1, 49) = 4.58, p = .037, \eta^2 = .085$), fine motor skills ($F(1, 49) = 12.82, p = .001, \eta^2 = .207$), problem solving skills ($F(1, 49) = 25.77, p < .001, \eta^2 = .345$), and personal social skills ($F(1, 49) = 11.20, p = .002, \eta^2 = .186$). Results of the MANOVA are presented in (Table 3). Means and standard deviations for the skills scores are presented in (Table 4).

	MANOVA F(5, 45)	ANOVA F(1, 49)				
Source		Communication	Gross motor	Fine motor	Problem solving	Personal social
Caretaker training	5.59**	13.91**	4.58*	12.82**	25.77**	11.20**

Note. * $p \leq .050$. ** $p \leq .010$. Otherwise $p > .050$.

Table 3: MANOVA for Skills Scores by Caretaker Training (Age Group: 1-13 Months).

Source	Pretest		Posttest	
	M	SD	M	SD
Communication	32.04	15.23	47.5	14.37
Gross motor	36.2	19.7	46.35	13.75
Fine motor	31.8	16.45	47.5	14.85
Problem solving	26.4	18.17	47.88	11.42
Personal social	29	19.42	45.77	16.29

Table 4: Means and Standard Deviations for Skills Scores between Pretest and Posttest (Age Group: 1-13 Months).

Ages 14-26 Months: The results of the MANOVA indicated overall significance for orphans between the ages of 14 and 26 months ($F(5, 48) = 19.47, p < .001, \eta^2 = .670$). Individual ANOVAs were used to examine the effect of the caretaker training on each of the five skills. Results indicated significant differences in communication skills ($F(1, 52) = 44.88, p < .001, \eta^2 = .463$), gross motor skills ($F(1, 52) = 13.23, p = .001, \eta^2 = .085$), fine motor skills ($F(1, 52) = 30.72, p < .001, \eta^2 = .371$), problem solving skills ($F(1, 52) = 68.32, p < .001, \eta^2 = .568$), and personal social skills ($F(1, 52) = 67.24, p < .001, \eta^2 = .564$). Results of the MANOVA are presented in (Table 5). Means and standard deviations for the skills scores are presented in (Table 6).

	MANOVA F(5, 48)	ANOVA F(1, 52)				
Source		Communication	Gross motor	Fine motor	Problem solving	Personal social
Caretaker training	19.47**	44.88**	13.23**	30.72**	68.32**	67.24**

Note. * $p \leq .050$. ** $p \leq .010$. Otherwise $p > .050$.

Table 5: MANOVA for Skills Scores by Caretaker Training (Age Group: 14-26 Months).

Source	Pretest		Posttest	
	M	SD	M	SD
Communication	23.48	17.15	50.81	12.85
Gross motor	37.39	18.58	51.94	10.62
Fine motor	28.26	15.71	48.23	10.77
Problem solving	31.52	12.74	54.03	7.12
Personal social	34.78	12.2	55	5.48

Table 6: Means and Standard Deviations for Skills Scores between Pretest and Posttest (Age Group: 14-26 Months).

Ages 27-39 Months: The results of the MANOVA indicated overall significance for orphans between the ages of 27 and 39 months ($F(5, 48) = 37.42, p < .001, \eta^2 = .796$). Individual ANOVAs were used to examine the effect of the caretaker training on each of the five skills. Results indicated significant differences in communication skills ($F(1, 52) = 86.43, p < .001, \eta^2 = .624$), gross motor skills ($F(1, 52) = 30.74, p < .001, \eta^2 = .372$), fine motor skills ($F(1, 52) = 139.14, p < .001, \eta^2 = .728$), problem solving skills ($F(1, 52) = 117.22, p < .001, \eta^2 = .693$), and personal social skills ($F(1, 52) = 19.07, p < .001, \eta^2 = .268$). Results of the MANOVA are presented in (Table 7). Means and standard deviations for the skills scores are presented in (Table 8).

	MANOVA F(5, 48)	ANOVA F(1, 52)				
Source		Communication	Gross motor	Fine motor	Problem solving	Personal social
Caretaker training	37.42**	86.43**	30.74**	139.14**	117.22**	19.07**
Note. * $p \leq .050$. ** $p \leq .010$. Otherwise $p > .050$.						

Table 7: MANOVA for Skills Scores by Caretaker Training (Age Group: 27-39 Months).

Source	Pretest		Posttest	
	M	SD	M	SD
Communication	32.69	12.75	56.96	5.15
Gross motor	40	16.25	57.86	4.99
Fine motor	15.77	12.22	49.64	8.71
Problem solving	25.77	13.83	56.61	5.78
Personal social	45.77	13.09	57.14	4.18

Table 8: Means and Standard Deviations for Skills Scores between Pretest and Posttest (Age Group: 27-39 Months).

Ages 40-52 Months: The results of the MANOVA indicated overall significance for orphans between the ages of 40 and 52 months ($F(5, 44) = 42.24, p < .001, \eta^2 = .828$). Individual ANOVAs were used to examine the effect of the caretaker training on each of the five skills. Results indicated significant differences in communication skills ($F(1, 48) = 53.01, p < .001, \eta^2 = .525$), gross motor skills ($F(1, 48) = 13.61, p = .001, \eta^2 = .221$), fine motor skills ($F(1, 48) = 186.89, p < .001, \eta^2 = .796$), problem solving skills ($F(1, 48) = 37.56, p < .001, \eta^2 = .439$), and personal social skills ($F(1, 48) = 52.27, p < .001, \eta^2 = .521$). Results of the MANOVA are presented in (Table 9). Means and standard deviations for the skills scores are presented in (Table 10).

	MANOVA F(5, 44)	ANOVA F(1, 48)				
Source		Communication	Gross motor	Fine motor	Problem solving	Personal social
Caretaker training	42.24**	53.01**	13.61**	186.89**	37.56**	52.27**
Note. * $p \leq .050$. ** $p \leq .010$. Otherwise $p > .050$.						

Table 9: MANOVA for Skills Scores by Caretaker Training (Age Group: 40-52 Months).

Source	Pretest		Posttest	
	M	SD	M	SD
Communication	32.69	15.51	56.67	4.58
Gross motor	47.31	12.59	57.08	3.27
Fine motor	17.5	11.68	56.04	7.66
Problem solving	34.62	16.18	55.83	5.25
Personal social	42.12	10.97	58.75	2.66

Table 10: Means and Standard Deviations for Skills Scores between Pretest and Posttest (Age Group: 40-52 Months).

Ages 53-66 Months: The results of the MANOVA indicated overall significance for orphans between the ages of 53 and 66 months ($F(5, 28) = 16.91, p < .001, \eta^2 = .751$). Individual ANOVAs were used to examine the effect of the caretaker training on each of the five skills. Results indicated significant differences in communication skills ($F(1, 32) = 12.19, p = .001, \eta^2 = .276$), gross motor skills ($F(1, 32) = 6.96, p = .013, \eta^2 = .179$), fine motor skills ($F(1, 32) = 65.01, p < .001, \eta^2 = .670$), problem solving skills ($F(1, 32) = 44.79, p < .001, \eta^2 = .583$), and personal social skills ($F(1, 32) = 19.67, p < .001, \eta^2 = .381$). Results of the MANOVA are presented in (Table 11). Means and standard deviations for the skills scores are presented in (Table 12).

	MANOVA F(5, 28)	ANOVA F(1, 32)				
Source		Communication	Gross motor	Fine motor	Problem solving	Personal social
Caretaker training	16.91**	12.19**	6.96*	65.01**	44.79**	19.67**

Note. * $p \leq .050$. ** $p \leq .010$. Otherwise $p > .050$.

Table 11: MANOVA for Skills Scores by Caretaker Training (Age Group: 53-66 Months).

Source	Pretest		Posttest	
	M	SD	M	SD
Communication	41.19	15.48	56.54	3.76
Gross motor	40.78	16.04	53.85	11.02
Fine motor	19.52	15.4	56.15	6.82
Problem solving	24.52	17.1	56.92	3.84
Personal social	46.67	10.41	59.62	1.39

Table 12: Means and Standard Deviations for Skills Scores between Pretest and Posttest (Age Group: 53-66 Months).

Across All Age Groups: Across all age groups, findings indicated that caregiver training could have a significant effect on the five skill areas assessed by the ASQ-3 (communication, gross motor, fine motor, problem-solving, and personal social). The average fine motor score increased from 22.57 to 51.51, while the average gross motor score increased from 40.34 to 53.42. For problem-solving skills, the average score increased from 28.57 to 54.25. The average scores on personal-social skills increased from 39.67 to 55.26, and the average communication score increased from 32.42 to 53.70.

Discussion

Nurses have unique opportunities to expand evidence-based pediatric practices into global communities. Those interested in global health and who take foreign mission trips are positioned to address the developmental concerns of orphans through research and practice. Ultimately, research and practice may improve the physical and emotional health, social skills, and quality of life among institutionalized orphans. The purpose of this study was to explore the effects of a nurse-led caretaker training on the emotional and physical development of institutionalized orphans. Results indicated that a simple, 2-hour caregiver training based on Watson’s Theory of Human Caring resulted in statistically significant improvements to orphans’ communication, gross motor, fine motor, problem solving, and personal-social skills across all age groups assessed (1 month to 66 months). Thus, this intervention could provide a low-cost, easily implemented caregiver training to improve orphans’ development, especially in war-torn and impoverished regions where caregivers lack the education and training needed to foster orphans’ emotional, social, and physical development. Nurses who perform mission and aid work in orphanages may utilize this caregiver training to improve the development and quality of life among institutionalized orphans throughout the world.

Future Research

Results from this study indicated multiple opportunities for future research. For example, future researchers may replicate the current study, but follow a longitudinal design to explore the effects of a caregiver training over a longer time period. This study could also be replicated in other locations. The current study took place in six orphanages in the same village in one country in Africa. The social, political, and cultural environments surrounding orphanages in other regions may influence the effectiveness of caregiver trainings. Various cultures of caregivers may influence their receptiveness to the training, and affect the implementation fidelity of what was learned during the educational intervention.

In line with implementation fidelity, future researchers may also follow up after the caretaker training with observations to assess the implementation fidelity of what the program taught caregivers. A qualitative observation component could paint a more detailed picture of the effectiveness of the caregiver training and highlight areas for improvement. Other qualitative studies on the topic may also provide more detail on how information learned during the training was utilized. Focus groups or one-on-one interviews with caregivers may help stakeholders understand areas where more training would be helpful. Such investigation could also provide a voice to caretakers, whose perceptions and experiences could provide helpful feedback for improvements to the training.

Finally, future researchers may replicate the study, but with the same pre- and post-test groups of orphans. This would be difficult to achieve, due to the nature of orphanages, which serve as temporary homes to children. However, with a larger sample of orphans from a larger number of orphanages, researchers may be able to obtain a pre- and post-test sample that contains the same children because a large sample would allow for attrition associated with the loss of participants who left orphanages during the study period.

Limitations

This study was limited to participants located at six orphanages in the same village in Jinja, Uganda, Africa. Although institutionalized orphans all over the world are likely to face similar challenges, cultural, political, and situational differences may affect the severity of these challenges in various regions of the world. Thus, the degree of effectiveness of the training in each of the five developmental areas assessed may vary in different locations.

Another limitation was the use of different groups of orphans pre- and post-test. The sample size and distribution across age groups were almost equal for pre- and post-test scenarios. Although the ideal situation would have been to assess the same group of orphans pre- and post-test, the nature of orphanages made that an impossible condition, given the time and sample size constraints of the current investigation. Children regularly come and go from most orphanages, including the institutions that served as the study sites in this investigation. Finally, time may have served as a study limitation. The educational intervention was a one-time training that lasted approximately 2 hours. It is possible that a longer training or multiple trainings would have yielded different results. In addition, the period between the training and the post-test ASQ-3 may have served as a study limitation. The ASQ-3 was re-administered approximately 2 months after the training. A longer period may have produced different post-test scores if it allowed caregivers more time to implement the strategies they learned, and provided orphans with more time to reap and demonstrate the benefits of those strategies. The cross-sectional design allowed the researcher to assess changes in ASQ-3 scores at one point in time; however, a longitudinal study may provide more insight into the effectiveness of the intervention.

Conclusion

This study served as a practical demonstration of how a little goes a long way. Orphaned children often endure conditions and experiences that no child should. In addition to losing parents and experiencing abandonment, they also face enduring developmental challenges. While the web of political, cultural, and social issues involved with orphans and institutionalization is intricate, this study revealed how a simple caregiver training could result in significant developmental improvements among institutionalized orphans. The long-term emotional, social, cognitive, and physical benefits that such a training may provide to these children are significant. It is the researcher's hope that this study prompts more caregiver training and development in orphanages throughout the world, to improve the current and future lives of orphaned children who have endured tragedies associated with abandonment and neglect. All orphanage caregivers should participate in training modules focused on developmental tasks and emotional support to help them better support these children. Findings from this study represent an opportunity for the nursing profession to step out of the comfort zone of nursing care at home, and address the needs of abandoned orphans. Nurses who are interested in global health and foreign mission trips have unique opportunities to expand evidence-based pediatric practices into global communities. Not only may children's physical and emotional status improve, but also their quality of life, integration into society, and productivity as responsible human beings. Finally, because orphaned children may become adopted, the ramifications affect not only the foreign country in which the child is born, but also countries where adopted children are raised.

Additional qualitative and longitudinal research is needed in this area to develop longer forms of interventions, supervision, and booster sessions.

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