



Effect of health education program on the knowledge of caregivers regarding infants care in Maygoma orphanage center, Khartoum state, Sudan (2016-2017)

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Abstract

Background: Young children in institutional care have often been abandoned at birth or soon after because of illegitimate pregnancies or parental instability. Orphaned, abandoned, and maltreated children pose problems for societies throughout the world. Although the actual number of children in residential institutions is impossible to gauge accurately, estimates have ranged from 2,000,000 to more than 8,000,000 (Browne, 2009; Save the Children, 2009). Most institutions are staffed with caregivers who work rotating shifts in rather bleak material conditions. 1 The children those most at risk for malnutrition and hunger-related diseases, in particular orphaned or abandoned children living in care centers, many of whom have significant special needs 2.

The aim of the study: the study aimed to evaluate the effect of health educational program on the knowledge of care givers regarding infants care in Maygoma Orphanage center. This a center for abandoned children in Khartoum.

Material and methods: An Intervention study, conducted in Mygoma orphanage center in Khartoum state from (2016-2017). The total coverage method used to lay down the sample which reaches (50) caregivers. Data was collected by using a questionnaire (to measure the knowledge) and was analyzed by using Statistical Packages for Social Sciences (SPSS version 20).

Results: The study showed, significant differences ($P < 0.05$) found in knowledge of care givers between the pre and post health education program About (58%) of caregivers displayed correct answers regarding the bottle preparation before attending the program, while after the program (82%) of them displayed it correctly. Regarding the time for giving feeding formula to infants, (46%) of care givers gave correct answers before attending the program, in contrast, after the program (94%) of them gave correct answers.

(88%)of the care givers answered correctly about how to start bottle feeding before attending the program, while (98%) of them answered correctly after attending the program. Regarding the time for introducing food to infants with Formula, (82 %) of the care givers gave correct answers before attending the program, while all of them (100%) mentioned correctly after the program. Moreover, studying knowledge of caregivers regarding the reasons of infant crying showed (76 %) of them answered correctly before program, while after program (98%) of them mentioned correctly.

Conclusion: The study concluded that health educational program had a significant impact related to the improvement of the caregiver's knowledge post application of the program.

Recommendation: The study recommended, increase the number of care givers to meet the number of infants, increase the resources.

Keywords: infants, caregivers, formula, correct practices, dipper changing, infants bathing

1. Introduction

Young children in institutional care have often been abandoned at birth or soon after because of illegitimate pregnancies or parental instability. Orphaned, abandoned, and maltreated children pose problems for societies throughout the world. Although the actual number of children in residential institutions is impossible to gauge accurately, estimates have ranged from 2,000,000 to more than 8,000,000 (Browne, 2009; Save the Children, 2009). Most institutions are staffed with caregivers who work rotating shifts in rather bleak material conditions. 1

The children those most at risk for malnutrition and hunger-related diseases, in particular orphaned or abandoned children living in care centers, many of whom have significant special needs 2. The quality of care giving relationships has an impact on children's health and development. These effects occur because children, whose care is less than adequate or whose care is disrupted in some way, may not receive sufficient nutrition; they may be subjected to stress; they may be physically abused and neglected; they may develop malnutrition; they may not grow well; and early signs of illness may not be detected. Research on what occurs when

young children are placed in institutions provides powerful evidence of the importance of supportive and stable caregiver-child relationships for the health of young children and their cognitive and social development. Young children in group care often fail to thrive, they tend to be sickly, they are demanding of attention, and they find it difficult to have normal peer relationships with other children 3. UNICEF estimated that over 17.8 million Children without appropriate care those are orphans 4. High number of babies abandoned: based on research undertaken in 2003, evidence indicated that an average of 110 new born babies were being abandoned in Khartoum every month. Half were estimated to die before receiving any assistance while those who survived abandonment were admitted to a state orphanage, Maygoma, where mortality rates stood at over 80 per cent. Research suggested that the majority of abandoned babies were born outside marriage. Stigma associated with bearing a child out of wedlock, and concerns about possible action by the authorities led many mothers to abandon babies on the streets, without seeking professional care for their child 5.

2. Materials and Methods

The Materials and Methods begins by presenting the research design, followed by setting and duration of the study, sample, sample size, data collection technique and tools, phases of the study, validity and reliability of instruments and ethical considerations.

2.1. Study design: An interventional prospective research design was used to accomplish this study.

2.2. Setting: Mygoma Orphanage center, Khartoum State, Sudan.

2.4. Sample: Care givers they were taking care of children less than one year.

2.5. Sample size: The recommended sample size given by the total coverage of caregivers (72) who were taking care of infant (196),but there are (22) of care givers included in the pretest phase and excluded in the post test they refused to field the posttest questioner. After that the sample size reaches (50) care givers taking care of infant (138).

2.6. Data collection technique and tools: Structured Interview questionnaire used to assess the caregivers knowledge regarding infant care in Maygoma center. The tool developed by researcher after reviewing by her supervisor.

2.7. Phases of the Study

2.7.1. Pre Intervention Phase: Baseline survey was conducted.

2.7.2. Intervention Phase: Started from (May-August, 2016), The number of theoretical lectures six lectures three lectures per week for each group, each lectures took forty five minutes about (infant feeding, bathing, changing dipper and treating dipper rash and how to deal with infant crying). A total of 50 caregivers were trained.

2.7.3. Post Intervention Monitoring: Monitoring and supervision were carried out monthly for 6 months after the intervention to assess application of care by the same data collector.

2.8. Ethical consideration: An official letter was taken from the Gezira University to approach the directors of the almaygoma center for permission to conduct the study.

3. Results

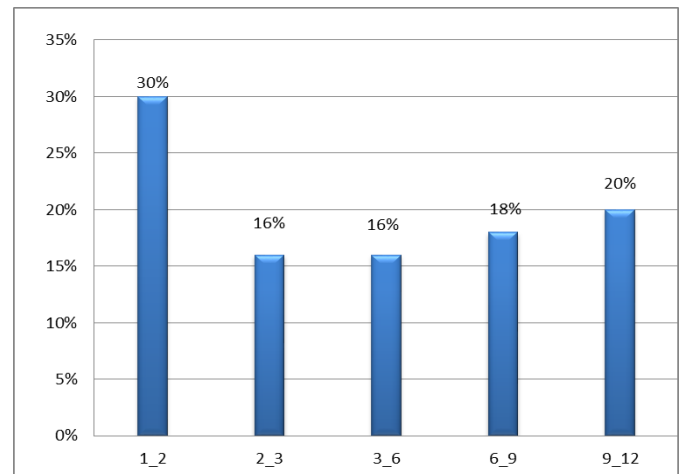


Fig 1: Age distribution of infants in Maygoma center (n=196)

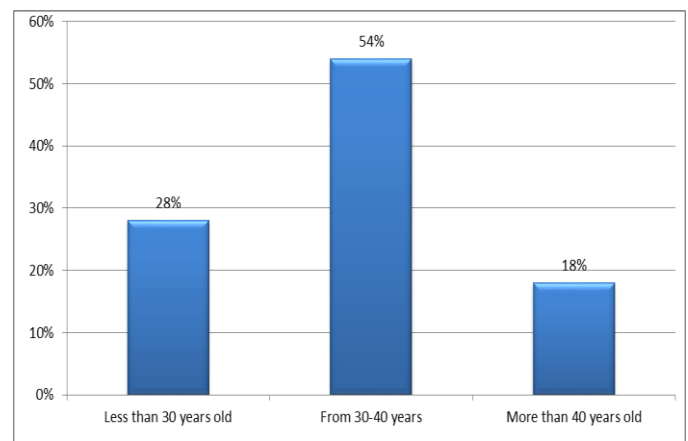


Fig 2: Distribution of study sample by Care givers age (n=50)

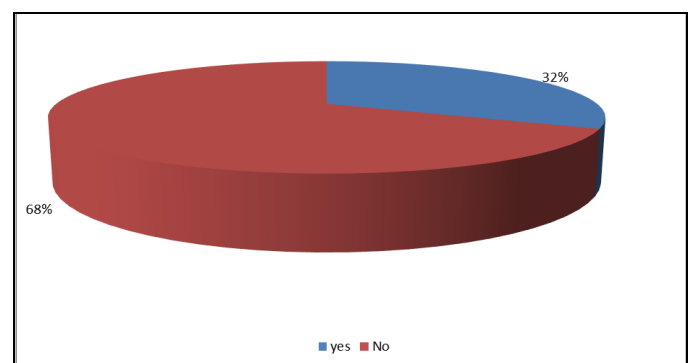


Fig 3: Distribution of study sample by care givers who are Marriage and they have an infant's (n=50)

The children age ranged between (1-12) month, about (30%) of age range between (1-2) month. figure (1). Care givers Age who taking care of infants more than half (54%) of these Care givers range between 30-40 yrs. figure (2). The majority (68%) of care givers who are marriage they have an infant's figure (3)

A significant differences were found in knowledge of care givers between the pretest and posttest ($P < 0.05$) regarding Knowledge of the care givers about preparation of bottles before infants feeding. before the education program, about (58%) of the care givers knew the preparing the bottles perfectly, while (42)they didn't know, however after the education program There was an improvement in the knowledge of care givers regarding preparing bottles, about (82%) of the care givers knew, while (18%)they did not know. (table1).

Table 1: Knowledge of the care givers regarding preparation of bottles before infants feeding: n (50)

	Pre		Post	
	No	%	No	%
Know	29	58%	41	82%
Don't know	21	42%	9	18%
Total	50	100%	50	100%

P-value = 0.00 Pearson Chi-Square = 15.9

About Time for giving feeding formula to infants (There was an improvement in the knowledge of care givers regarding the time for feeding formula to infant's, before the education program, about (46%) of the care givers knew the feeding time, while (54 %) they did not know, as for after the education program most of the study group ninety four (94%) knew the time of feeding, while (6%) percent they did not know (table 2).

Table 2: Knowledge of the care givers regarding the time for giving feeding formula to infant's n (50)

	Pre		Post	
	No	%	No	%
Know	23	46%	47	94%
Don't know	27	54%	3	6%
Total	50	100%	50	100%

P-value = 0.00 Pearson Chi-Square = 28.0

About begin at initiation of infant bottle feeding (88 % of the care givers gave correct answer about the begin at initiation of infant bottle feeding before attendance of the program, while, correct answer was mentioned by 98% of them after attendance) (table 3).

Table 3: Knowledge of the care givers regarding first step of bottle feeding: n (50)

	Pre		Post	
	No	%	No	%
Know	44	88%	49	98%
Don't know	6	12%	1	2%
Total	50	100%	50	100%

P-value = 0.02 Pearson Chi-Square = 7.26

About the age for giving Foods Other Than Formula to infant

about (82%) of care givers they knew when they giving Foods Other Than Formula to infant and (18%) of care givers they didn't know, however after the program the whole sample (100%) they knew. (Table 4).

Table 4: Knowledge of the care givers regarding the time for introducing Foods to infant with Formula: n (50)

	Pre		Post	
	No	%	No	%
Know	41	82%	50	100%
Don't know	9	18%	0	0%
Total	50	100%	50	100%

P-value = 0.001 Pearson Chi-Square = 9.8

Also about the age of weaning baby from the bottle(about (62%) of care givers they knew when they wean the baby from the bottle, however (38%) they didn't know, as for after the education program most of the study group ninety (90%) they knew when they wean the baby from the bottle, (10%) percent they didn't know) (table 5).

Table 5: Knowledge of the care givers regarding: The age of weaning the baby from the bottle: n (50)

	Pre		Post	
	No	%	No	%
Know	31	62%	45	90%
Don't know	19	38%	5	10%
Total	50	100%	50	100%

P-value = 0.005 Pearson Chi-Square = 10.8

The reason of infant crying ((76%) of care givers they knew Why the infant cries without appear reason, however about (24%) they did not know, as for after the education program most of the study group (98%) they knew The reason of infant crying and two (2%) they didn't know (table6)

Table 6: Knowledge of the care givers regarding: The reason of infant crying n: 50

	Pre		Post	
	No	%	No	%
Know	38	76%	49	98%
Don't know	12	24%	1	2%
Total	50	100%	50	100%

P-value = 0.004 Pearson Chi-Square = 11.19

The best sleeping position to infants (the best sleeping position to infants) about four (4%) percent of care givers they knew the best sleeping position to infants) and (96%) of care givers they didn't know, as for after the education program (76%) of the study group they knew the best sleeping position to infants and (24%) percent they did not knew) (Table 7).

Table 7: Knowledge of the care givers regarding (the best sleeping position to infants)n:50

	Pre		Post	
	No	%	No	%
Know	2	4%	12	76%
Don't know	48	96%	38	24%
Total	50	100%	50	100%

P-value = 0.001 Pearson Chi-Square = 15.00

4. Discussion

Introduction: A study conducted at Mygoma center in Khartoum to evaluate the effect of health education program on the knowledge, attitude and practice of caregivers regarding infant care. The data collected by the researcher and trained persons through questionnaires (50) and chick list filled from care givers, who were taking care of (138) infants and they completed the education program. The infants age between (1-12) months, (30%) of them between (1-2) month. More than half (54%) of care givers age between (30-40) yrs. The majority of care givers (68%) they have an infants, and that is good for the benefit of those infants.

Before the educational program the care givers had poor knowledge regarding, the preparing bottles, the program increased knowledge of the study sample (care givers), where the awareness of care givers regarding the preparing bottles about fifty eight (58%) at pretest measurement, which increased at posttest measurement to (82%) percent, indicating significant differences ($p=0.001$) in their knowledge between pretest and posttest period. This was agreed with the findings of previous study conducted in Cambodia to assess the impact of a nutrition education (NE) program aimed at promoting improved IYCF behaviors in combination with an agriculture intervention on children's dietary diversity and nutritional status, the study showed that the nutrition education intervention embedded in an agriculture project led to significant improvements in the quality of children's diet. However, the mean diversity of children's diet remained just below the minimum level of four out of seven food groups as recommended for young children by the World Health Organization. The best practices have been summarized in several reviews, but the scientific evidence on nutrition education projects in development cooperation and their impact on growth is limited. (Reinbott, A. *et al.*, 2016.)

Concerning the Knowledge of the care givers regarding the time for giving feeding formula to infants, it was found to be clearly increased after attendance of the program, There was an improvement in the knowledge of care givers, before the education program, about forty six (46%) percent of the care givers knew, while thirty eight (38%) percent knew partially and sixteen (16 %) they did not know, as for after the education program most of the study group ninety four (94%) knew the time of feeding, while one (1%) percent knew partially and two (2%) percent did not know, indicating significant differences ($P=0.00$) in their knowledge between pretest and posttest period. This agreed with, Responsive feeding: is a technique in which infants are fed when they express hunger, instead of being forced to keep to a feeding schedule. This can be challenging for caregivers who provide care for several infants at one time. While it may be stressful for caregivers, practicing responsive feeding ensures infants are receiving appropriate nourishment for growth and development. Caregivers should watch for and respond to an infant's cues for hunger. An infant who is hungry may: Wake and toss, Suck on fist, Cry and fuss, Appear as though they may cry (Orphan Nutrition, 2016)

There was an improvement in the knowledge of care givers regarding the begin at initiation of infant bottle feeding, after the attend education program, however before the program about eighty eight (88%) percent of the care givers know how

to begin at initiation of infant bottle feeding, while twelve (12%) percent were know partially and no one did not know, as for after the education program most of the study group ninety eight (98%) know the begin at initiation of infant bottle feeding, while no person know partially and only one (1%) percent did not know. This indicating significant differences ($P=0.02$) in their knowledge between pretest and posttest period. This agreed with (Feeding Infants: A Guide for Use in the Child Nutrition Programs.), Wash your hands. Hold your baby close to you, supporting the back and the head with your hand or in the crook of your arm. You should hold the baby in an upright position so that the head is higher than the stomach. Do not feed the baby in a lying down position as the milk flows from the bottle too rapidly and may cause the baby to choke or overfeed and spit up. Never leave the baby in the crib and prop or hold the bottle in his/her mouth for feeding. Brush the cheek or the lips with the bottle nipple to encourage mouth opening. (Jacobs, A., *et al.*, 2016)

Concerning the Knowledge of the care givers regarding the time for giving infants Foods Other Than Formula, it was found to be clearly increased after attendance of the program, There was an improvement in the knowledge of care givers about eighty two (82%) percent of care givers they knew when do you permitting to give infant Foods Other Than Formula and eighteen (18%) percent of care givers they did not know when do you permitting to give infant Foods Other Than Formula, however after the program the whole sample (100%) have recognized when do you permitting to give infant Foods Other Than Formula. indicating high significant differences ($P=0.001$) in their knowledge between pretest and posttest period and that was confirmed by (WHO) The World Health Organization recommends that infants be exclusively breast-fed for the first six months. However, for orphaned infants, breast milk is not an option. In situations where breast milk is not available, an iron-fortified formula can be used as a substitute. Infants under 6 month of age should not be offered fruit juice. It can contribute to problems such as tooth decay, abdominal pain and bloating, and diarrhea. Additionally, cow milk should not be fed to infants 0-6 months old. Cow milk is difficult for infants to digest and does not provide appropriate amounts of nutrients necessary for early development. (Orphan Nutrition, 2016)

About knowledge of the care givers regarding weaning the baby from the bottle There was an improvement in the knowledge of care givers about sixty two (62%) percent of care givers they knew when did you wean the baby from the bottle however (38%) they did not know when they wean the baby from the bottle, as for after the education program most of the study group ninety (90%) they knew when they wean the baby from the bottle, (10%) percent they did not know. this Indicating high significant differences ($P=0.005$) in their knowledge between pretest and posttest period and that was confirmed by As your baby begins to eat more solid foods and drink from a cup, he can be weaned from the bottle. Begin to wean your baby gradually, at about 9 to 10 months. By 12 to 14 months, most babies can drink from a cup. (Tsang, T., *et al.*, 1997)

Before the educational program the care givers had poor knowledge, regarding (the reasons of infants crying) about seventy six (76%) percent of care givers they knew the

reasons of infants crying and (24%) they did not know, as for after the education program most of the study group ninety eight percent (98%) they knew and only two (2%) they didn't know. this Indicating high significant differences ($P=0.004$) in their knowledge between pretest and posttest period and that was confirmed by Infants cry as a form of basic instinctive communication. A crying infant may be trying to express a variety of feelings including hunger, discomfort, overstimulation, boredom, wanting something, or loneliness, When your baby cries without apparent reason for several hours on a regular basis, he may have colic. (Tsang, T., *et al.*,1997)

Regarding the knowledge of the care givers about (the best sleeping position to infants) There was an improvement in the knowledge of care givers however before program about four (4%) percent of care givers they knew the best sleeping position to infants, thirty six (96%) they did not know, as for after the education program twenty four (76%) of the study group they knew and (24%) percent they did not know. indicating high significant differences ($P=0.001$) in their knowledge between pretest and posttest period and that was confirmed by Safe Infant Sleep Interventions study which showed Sudden infant death syndrome (SIDS) and other sleep-related infant deaths, such as accidental suffocation and strangulation in bed and ill-defined deaths, are collectively known as sudden and unexpected infant death (SUID) and account for >4000 deaths annually in the USA. While the "Back to Sleep" public awareness campaign, which began in 1994 and has been superseded by the "Safe to Sleep" campaign, is credited with decreasing rates of prone infant sleeping leading to reductions in mortality rates from SIDS/SUID, these decreases have plateaued in the past decade. Some caregivers, including parents, relatives, child care providers, and health care professionals, continue to resist adoption of safe infant sleep recommendations, such as placing infants supine, avoidance of smoke exposure, avoidance of parent-infant bed sharing, and avoidance of soft bedding (including blankets, pillows, and bumper pads). In an effort to change infant sleep-related practices of parents and professionals, multiple interventions have been implemented. These efforts to effect change have been directed at multiple levels, from infant caregivers to state legislation, and can be viewed in the context of health behavior change models and theories. (Rachel, Y., *et al.*,2016)

5. Conclusion

The study concluded that: There was significant statistical improvement in knowledge and practices skills after the educational program offered to the caregivers. There was a statistically significant difference between pre and posttest after the application of the educational program ($P < 0.05$) in the knowledge of care givers regarding the preparing bottles, Time for giving feeding formula to infants, how to start infants bottle feeding, The time for introducing foods with formula to infants, reasons of infant crying.

6. Recommendations

The researcher recommends the following: It is important to design, plans, strategies and protocols in all orphan centers through which improvement and the quality of care to infants

when will be receive. In Order to reach a successful goal, orphan centers must be provide visible support and sufficient resources for continuous educational programs to grant the importance of improving the quality of infants care. It is recommended that the availability of recourses, increase number of care givers to meet the number of infants.

7. References

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