

The Effect of Health Education Program for Caregivers about Circumcision in Neonates and Infants

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Abstract Circumcision is the excision of the foreskin of the penis which may be performed in the neonatal period or in later life. Circumcision benefits are minimizing urinary tract infection, enhances of penile hygiene, prevents of penile carcinoma. However, circumcision may cause complications such as bleeding, and infection. Some of these complications can be minimized through adequate health education by nursing staff to the caregivers who may influence circumcision outcome. **The aim of the study to:** identify the effect of health education program for caregivers about circumcision in neonates and infants. **Design:** a randomized controlled trial design was used only one month. **Setting:** study was conducted at Omar Ibn El Khattab Specialized Medical Center at Minia City. **Sample:** a random sample were selected and randomly equally divided into two groups study (20) and control (20). **Tools:** two tools were used, an interview questionnaire sheet was used to assess all caregivers' knowledge about circumcision before & after implementing the program and a post assessment sheet about circumcision care **Results:** this study showed significant improvement in the total knowledge after health education program compared to total knowledge before implementing the program among study group. **Conclusion:** demonstration with written instructions offered to caregivers help in early detection of complication. **Recommendation:** health education program should be given by a qualified nurse supported by a simple clear hand out to caregivers in different hospitals.

Keywords: *circumcision, neonate, infants, parents' education*

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1. Introduction

Circumcision of baby boys is an optional surgical procedure to remove the layer of skin (called the foreskin or the prepuce) that covers the head (glans) of the penis [1]. Circumcision is the most common performed surgery worldwide and about 30% of men is circumcised, of whom 70% are Muslim. About 120 circumcisions are performed every 5 minutes over the world. It may be performed in the neonatal period or later in the life. It is a widely observed religious practice in Jewish and Islamic societies. The Jewish and Muslims faith dictates newborn circumcision. It is accomplished on male Jewish infants on the eighth day after birth in ceremony called a bris. While practice by Muslims between the age of 7 days and 14 years [2,3].

Circumcision have a different reasons; the first, medical reasons in present of pathological phemosis, religious is the second followed by social or cultural and finally in many countries circumcision is performed as " a routine – circumcision" in the neonatal period. Circumcision has many medical benefits such as minimizing urinary tract infection, reduces the incidence of balanitis and enhances of penile hygiene, prevents of penile carcinoma. However, circumcision may cause complications such as

bleeding, infection, meatitis and adhesions. Some of these complications can be minimized through imparting adequate health education by nursing staff to the caregivers who may influence circumcision outcome [4].

There are several ways to perform a circumcision are Plastibell method, Gomco Morgan clamp. Clamp method is most commonly founded; the foreskin is pushed from the head of the penis and clamped with a metal or plastic ring-like device. If the ring is metal, the foreskin is cut off and the metal device is removed. The wound heals in 5 to 7 days. If the ring is plastic, a piece of suture is tied tightly around the foreskin. This pushes the tissue into a groove in the plastic over the head of the penis. Within 5 to 7 days, the plastic covering the penis falls free, leaving a completely healed circumcision. The baby may be given a sweetened pacifier during the procedure. Tylenol (acetaminophen) may be given afterward [5].

The risks of circumcision are related to complications from the procedure. These complications are bleeding, infection, dehiscence (separation of approximated edges of skin), meatitis (loss of protective foreskin), adhesions, concealed penis, urethral fistula, meatal stenosis, and urinary retention and post circumcision phemosis. In addition, circumcision cause pain in unanesthetized infants and neonates in form of short term stresses which include increase heart rate, behavioral change, prolonged

crying, increased cortisol level and decreased blood oxygenation [4].

The American Academy of Pediatrics emphasized the need to explain post circumcision home care to the caregivers considering the types of procedure. If clamp (Gomco or Mogen) procedure was used, petroleum gauze dressing applied loosely to prevent adherence to the diaper. While if the Plastibell was applied, no special dressing is required and the diaper is applied loosely to prevent friction against the penis. The circumcision is assessed for excessive bleeding in the first few hours after the procedure, every 30 minutes for at least 2 hours and then at least 3 hours thereafter and the first urination is recorded. Normally, on the second day a yellowish white exudates forms as a part of granulation process, as healing progress, the exudates disappear [6].

The Nurses plays an important role in providing parents or caregivers education regarding the care of their circumcised neonates and infants. Nurses take responsibility for ensuring that parents and caregivers' have biased and accurate information about caring for a circumcised penis. With successfully nursing education the good impact on the child's health and the circumcision complications will be decreased. For achieving such issue, the current study aims to identify the effect of health education program for caregivers on circumcision in neonates and infants [6].

2. The Aim Study

Identify the effect of health education program for caregivers about circumcision in neonates and infants.

3. Subjects and Method

Research Design: Randomized controlled trial.

3.1. Setting

The study was conducted at Omar Ibn El Khattab Specialized Medical Center at Minia City.

3.2. Sampling

Neonates and infants from the previously mentioned setting throughout one month period were selected and randomly equally divided into two groups study (20) and control (20), and fulfilled the following criteria: **Inclusion Criteria:** Newborns older than 24 hours and infants

3.3. Exclusion Criteria

- Evidence of a coagulopathy.
- Small penis due to prematurity
- Penile scrotal congenital anomalies.
- Sever illness or Infection.

3.4. Tools

Two tools were developed and used by the researchers after reviewing of the related literature.

Tool I: an interview questionnaire sheet (Before and after) implementing health education program: it was used to assess caregivers' knowledge about circumcision such as, definition, benefits, early & late complications and intervention care. In addition to their socio demographic data such as age, level of education and occupation of mothers.

Tool II: was used to assess post circumcision care and neonates' and infants' circumcised site. In addition to their socio-demographic data as age. It was consisted of two parts:

I. **Assessment of care:** it included assessment of dressing, applying local antimicrobial, appropriate diaper practice, emollient on glans and local hygiene.

II. **Assessment of complications:** it assessed the following; bleeding, edema, excoriation, balanitis and removal of excessive skin

3.5. Methods

The permission obtained from the responsible authorized personnel at Omar Ibn El Khattab Specialized Medical Center at Minia city for conducting the study. Ethical approval asserted by verbal consent obtained from the parents and caregivers' of neonates' and infants' who will participate in the study. Confidentiality and anonymity of individual response guaranteed. The study tools were is developed by the researchers after reviewing of the related literature. Content validity done for the tool by 5 experts in pediatric field before and after health education program test done to assess caregiver's knowledge about circumcision and regarding care of their circumcised neonates' and infants' before and after implementing a health education program using (tool I) to both groups. The researcher developed health education program content based on the study group caregivers' need and after reviewing of the related literature for the study group caregivers'. It fulfilled the following objectives:

- Define circumcision; identify benefits of circumcision and signs and symptoms after operation of male circumcision and complication after operation of male circumcision.
- Identify importance of post circumcision home care.
- Discuss discharge instructions about home care after circumcision such as: bathing, activities allowed and complications to be prevented.

Implementation of the health education program applied as follow:

- It was carried out at Omar Ibn El Khattab Specialized Medical Center at Minia city, night shift before circumcision and the time needed was 30 minutes.
- Mother class, discussion and video was be used as a teaching strategies and aids.

3.6. Limitations of the Study

Difficult collect parents or care givers to attend the program, in addition, some of parents or care givers of neonate or infant has low concentration and need continuous repetition, which required a lot of time and effort.

3.7. Data Analysis

Statistical analysis was performed by using Statistical Package for the Social Sciences (SPSS) software package and Excel for figures. The content of each tool was analyzed, categorized and then coded. Qualitative studied variables were compared using Chi-square test. While quantitative data, comparison between two variables was done using student's t-test. P-value less 0.05 was considered as statically significant.

4. Results

Table 1 and Figure 1 shows percent distributions of newborns and infants in the study and control groups according to their age. The age of study group and control group were ranged from 7 to 150 days with a mean age 79.40 ± 44.9 days.

Table 2 illustrates that 40% of parents or caregivers don't know the meaning of circumcision in study and control group before application of education program but 90% of parents or caregivers know that circumcision excision of the foreskin of the penis in study group after application of educational program while in control group 10% who know the meaning of circumcision. As regard for benefits

of circumcision in study group 5% who know the benefits before application of educational program while 85% who know the benefits of circumcision after application of educational program. Regarding signs and symptoms after operations of male circumcision, 40% of caregivers in the study group before application of educational program of parents or caregivers don't know the signs and symptoms of after operations of male circumcision but 100% study group after application of educational program say all the signs and symptoms after operations of male circumcision. However, this increase reached statistically significant difference between the mothers parents or care giver know definition, signs and symptoms of after operations of male circumcision (P. 0.02, 0.05 and 0.00); respectively.

Table 1. Percent distributions of newborns and infants in the study and control groups according to their age (n=40).

Age (days)	Study group N= 20		Control group N= 20		P. value
	N	%	N	%	
Early neonates < 7 days	2	10	2	10	0.06
Late neonates (7 – 28 days)	3	15	3	15	
Post neonates (> 28 days)	15	75	15	75	
Mean \pm SD	79.40 \pm 44.9		79.40 \pm 44.9		
Minimum – maximum	7-150		7-150		

*= Significant.

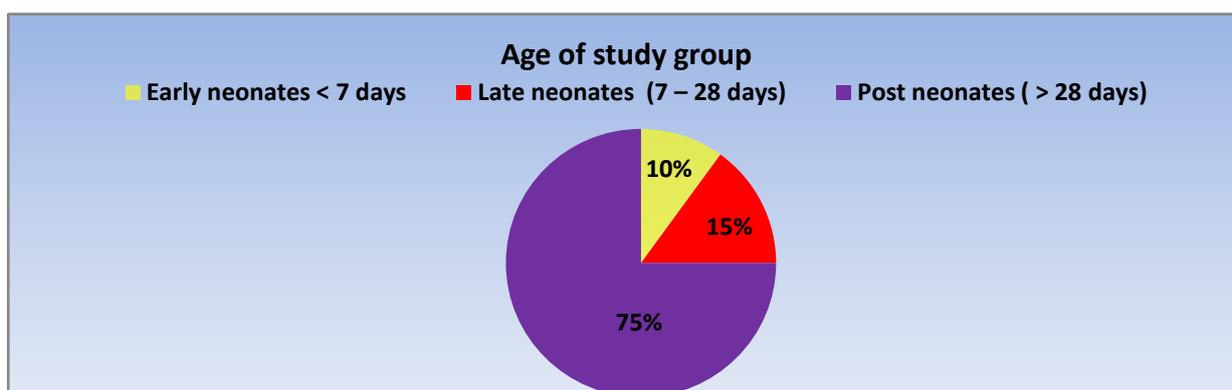


Figure 1. Percent distribution of newborns and infants according to their age

Table 2. Distribution of parents or caregivers according to their knowledge about male neonates or infants circumcision of study and control group before and after education program (n= 40)

General information about circumcision	Groups								P-value
	Study (n=20)				Control (n=20)				
	Before		After		Before		After		
	N	%	N	%	N	%	N	%	
Definition of circumcision									
- Excision of the foreskin of the penis	7	35	18	90	2	10	2	10	X ² =0.86 0.02*
- inflammation of the penis	3	15	0	0	8	40	8	40	
- All of the above	2	10	2	10	2	10	4	20	
- Don't know	8	40	0	0	8	40	6	30	
Benefits of circumcision									
- Decrease urinary tract infection	7	35	0	0	8	40	8	40	X ² =0.80 0.05*
- enhances of penile hygiene	7	35	3		10	50	7	35	
- prevents of penile carcinoma	3	15	0	0	0	0	0	0	
- All of the above	1	5	17	85	2	10	5	25	
- Don't know	2	10	0	0	0	0	0	0	
Signs and symptoms after operations of male circumcision									
- The penis is read and edema	4	20	0	0	5	25	2	10	X ² =0.70 0.00*
- Breast feeding less than usual in first few hours after operation	6	30	0	0	8	40	5	25	
- All of the above	2	10	20	100	2	10	8	40	
- Don't know	8	40	0	0	5	25	5	25	

*= Significant.

Table 4 Presents that in the study group 60% were free from complications in neonate or infant: while the rest (40%) had: 5% has edema in late neonates but 20% edema and 15% excoriation in post neonates. While in control study 20 % free from complication and 10% has edema late neonates 40% excoriation in late and post neonates, while 10% bleeding and 20 % balanitis in post neonates. However, this increase reached statistically significant difference (P. 0.00).

5. Discussion

Circumcision is the most commonly performed surgical procedure done today. Circumcision has many medical benefits such as minimizing urinary tract infection, reducing the incidence of balanitis, enhancement penile hygiene and preventing penile cancer. However, Circumcision may cause complications as bleeding, infection and adhesions. Most parents choose to have circumcision due to social, cultural and religious reasons [7].

Circumcision is an ancient surgical procedure with a history of 15000 years, according to Egyptian mummies and wall reliefs, and has been performed for 5000 years in South Africa. The Middle East which presently contains the most crowded circumcised population has a slightly more recent history of 3000 years. It is still done due to medical indications. Therefore Muslim countries like Saudi Arabia like to practice it as an integral part related to religion. Regardless the reasons, most parents are not properly counseled about circumcision care. Registered nurses, surgical technicians, or nurse aids were performed male circumcision procedures in some countries [8].

The aim of this study was to identify the effect of health education program for caregivers about circumcision in neonates and infants.

All over the world, a lot of studies handled circumcision in general. Meanwhile, the present study considered a unique study that emphasizes the effect of implementing health education program about male circumcision in neonate and infant.

Present study reveals that the parents or caregivers knowledge about care after operations of male circumcision in study group improved after application of educational program this increase reached statistically significant difference (P. 0.00). These agree with [9] who state that there was an increased in the total knowledge after health education program compared to total knowledge before implementing the program among study group (3.4 to 0.8) and $p < 0.01$.

The present study shows that the post circumcision complication increase with increase in neonates or infants age this agree with Gafer et al., [9] who reported that the older median age (45) days developed four complications while (38.5) days developed one complication. Also agree with Horowitz & Gershbein [10] who reported that circumcision complications occur more frequently with increase of the patient age.

The results of the present study related to post circumcision complications among study and control groups found that eight cases in the study group representing early complications such as edema, excoriation. This related to an early detection of complications through

answering phone call that lead to an early management which reduce the acute one. On the other hand, the control group developed 4 cases has acute complications (balanitis) which required admission to hospital. These results agree with finding of Jorgen et al., [11] who mentioned that occurrence of two acute complications as superficial skin infections which needed treatment for one week postoperatively in hospital. Jorgen et al. [11], found that among 20 patients with recorded complications, two patients of them presenting with edema of the penis that needs no treatment. This agrees with the results of the present study which found that edema was presented in 5 cases of study group which is normally found after circumcision and no treatment needed.

Finally the study showed better knowledge, care and less complication among caregiver of study group compared to control group. There was an improvement in knowledge among study group after health education program for caregivers about circumcision in neonates and infants. This agree with Jorgen et al., [11] who stated that the health education is one of the nurse's roles in neonatal circumcision, so parents should be instructed about the proper post-operative care and the care of the penis after circumcision that has an objective of minimizing post-operative complications and most infections can be prevented with proper patient preparation, gloves wearing and local wound care including cleaning the penis, and application of antibiotic ointment with diaper change. This agree with Gafer et al., [9] who reported that more than 50% of study group had score 2 regarding care while 40% of control group had score =1.83. This helped in reducing severity of complications among study group who receive health education program.

6. Conclusion

Simple demonstration with simple basic written instructions offered to caregivers after performing circumcision helped in early detection of complications and early intervention which subsequently improved neonates and infants condition. Also, it reduced cost to the hospital and number of visits to the clinic.

7. Recommendations

Health education is a must and should be given by a qualified nurse supported by a simple clear hand out. Printed handout about circumcision care should be available for all neonates and infants caregivers in outpatient setting. In future, research large sample size will be good to give significant result.

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