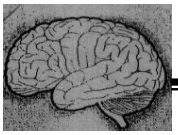
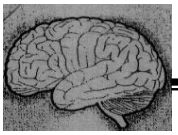


Summary

Head injuries is a common health problem of childhood through out the world. This condition is due to disturbance level of consciousness and CSF leakage and affects on memory and speech and motor movement. Its also accounting for many days of school absenteeism and many hospital admissions each year. However, education for children and their mothers about head injury self management skills including; measuring level of consciousness through Glasgow Coma Scale and dressing of wound, breathing and coughing exercises and physical exercises; all these skills enable children and their mothers to cope with the disease and make trauma more controllable.

The aims of the study are to:

1. Assess mothers knowledge and practice about care of their children with head injury.
2. Design and implement a teaching program for mothers about care of their children with head injury.
3. Evaluate the effect of the teaching program on mothers knowledge and practice.



Research Hypotheses:

To fulfill this aim, the following research hypotheses were formulated:

- Mothers had lack of knowledge and practice about care of their children with head injury.
- There will be a significant increase in the knowledge and practice scores of mothers' children with head injury post program implementation than pre program implementation.
- There well be a positive correlation between mother's knowledge and practice scores

Research Design:

The present study follows a quasi-experimental research design to achieve the purpose. This design is a mean of examining casual relationships, it involves the manipulation of an independent variable, which is the institution of an experimental treatment. However, quasi-experimental design lacks at least one of the other two properties that characterize true experiments: randomization.

Technical Design

Technical design including the setting, subjects as well as tools of data collection.

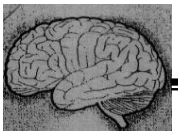
Setting

This study was conducted in pediatric neurosurgery departments of Benha University Hospital and Teaching Hospital in Benha city.

The informed setting for data collection of this study was Benha University Hospital as demonstrated in the protocol but as a result of the little available number of the study age group (from 2 to 12), the researcher obtained data, in addition to this hospital, from Teaching Hospital in Benha city.

Subjects

A representative sample of children with head injury (who was diagnosed by a physician) was included in the study from the previously mentioned settings, the total number of them were 80. In addition, the children were also included in the study from both sexes, their ages ranged from 2 to 12 years and they were free from any other chronic diseases such as DM, renal diseases and they have head injury.



Tools of Data Collection

The following tools were designed and used by the researcher after reviewing a related literature and under supervision of the supervisors of the study.

I. Pre/Post Assessment Questionnaire format (Appendix II):

It included the following parts:

* Part One:

1. Socio demographic characteristics of children, it includes; age, sex, birth orders and residence.
2. Head injury characteristics, it includes; onset of child's complain, symptoms occurrence of convulsion and vomiting during head injury, effect of head injury on child health, level of consciousness, motor movement, relatives complaint from head injury.
3. Socio demographic characteristics of mothers, it includes; age, level of education occupation.
4. Mother's knowledge about of their children, it includes, name of drug and type of the prescribed drug, methods and dose of the drug that the mother gives for her child and regularity of the mother toward giving this medication for her child.

* Part Two:

5- Mother's knowledge regarding to head injury as definition, causes symptoms (mild, moderate and severe), treatment, complications and care of children during head injury.

6. Mothers' knowledge regarding head injury triggering factors it includes; psychological, environmental, playing and additional mental diseases and the relation between them toward head injury occurrence.

II. Pre/post mother's practice checklist :

It prepared by researcher to observe mothers' practice related to care of their children during head injury and care that given by them to avoid attack from occurrence, it includes;

First, Mother's intervention toward dealing with their children during head injury occurrence such observe to vomiting, convulsion, blood or C.S.F leakage from nose or mouth or ear and observed level of consciousness. In addition to, providing complete relaxation and complete bed rest, performing regular breathing exercise and physiotherapy for upper and lower extremities, wound care and mouth care.

Second, **Second**, Mother's intervention toward dealing with their children after head injury occurrence such as regular giving balanced diet, physiotherapy, rehabilitation program,

learn child how to deal with new sequel, exercise program for upper and lower extremities.

Scoring System

The score of knowledge was divided into two levels, where mothers who were their knowledge scores above 60 grades, they considered on the satisfactory level and those who were score below 60 grades are on unsatisfactory level. Meanwhile, the score of practice was divided into two levels, where mothers who were their practices scores above 80 grades, they considered on the satisfactory level and those who were score below 80 grades are on unsatisfactory level.

III. Discharge Guide Program (Appendix III)

It was prepared by the researcher under supervision after reviewing the related literature which based on mothers' knowledge and practice deficit about head injury and care of their children during head injury.

II. Operational Design

1. Preparatory Phase:

A review of the current and past local and international related books, magazines and periodicals to get acquainted with various aspects related to head injury definition, its causes incidence, pathophysiology, triggering factors, its impact on child health and school activities, management, role of the nurse and its prognosis and then to develop the study tools and the content of the program.

2. Pilot Study

A pilot study was carried out during April, 2010. It was involved eight mothers of children with head injury and their children to test the applicability of the study tools and setting and to determine the time needed to fill the sheet. Accordingly the necessary modifications were done in the form of adding or omission of some questions.

3. Filed Work

The field work was carried out at July, 2010 to January, 2011. The purpose of the study was explained by the researcher to all mothers of children with head injury who included in the study. The average time needed for the completion of each interview for knowledge collection (with mothers) was around (45-60 minutes), while the time needed for practice observation was 60 minutes.

A trust relation was established quickly between the researcher and the mothers during the initial interview. Mothers were open and comfortable speaking about their educational experiences. Mothers expressed a sincere appreciation for head injury education and handout that were provided.

4. Program Construction

The program was constructed based on the actual results that obtained from preprogram assessment using the interviewing questionnaire, practice checklist as well as literature review which aimed to satisfy the studied mothers deficit knowledge and practice regarding to care of their children with head injury.

Steps of Program Construction:

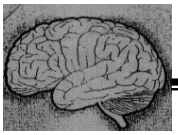
a. General Objectives;

The aim of this program was to improve the mothers' knowledge and practice regarding to care of their children with head injury.

b. Specific Objectives;

By the end of this program, each mother should be able to: (according to the given handout and questionnaire)

- Define injury and head injury.
- Determine classification of head injury.
- Mention of triggering factors for head injury.
- Enumerate symptoms of head injury.
- Identify symptoms that refers to the worsen head injury.
- Identify Glasgow coma scale.
- Determine lines of treatment.
- List types and doses of medication.
- Discuss methods that should be followed to avoid head injury.
- Determine the nutritional requirements that should be given to the child.
- Measure Glasgow coma scale.
- Perform breathing and body exercise and wound care for the child.
- Perform mouth, nose and ear care for the child with head injury.
- Apply interventions for the child during head injury.



Program Implementation

Implementation of the program was carried out at the previously mention setting. The subject material used has been sequenced through the 18 sessions, 9 sessions for theory and 9 sessions for practice. The duration of each session was ranged from 45 to 60 minutes including periods of discussion according to mothers' achievement, progress and feedback. Sessions started according to mothers' suitable time, usually at 9 Am.

Mothers were divided into small groups (16 group), each group includes about 4 to 5 mothers in each session and the content was implemented for each group at every session separately at 8 weeks (3 days/week), in addition to one week for pre and post test.

At the beginning of first session, an orientation to the program and its purpose took place. After each session, a feedback about the previous session was done and the objective of the new topics. Simple Arabic language was used to suit the mothers' level of understanding. Methods of teaching were modified lectures, group discussion, demonstration, re-demonstration and role play. An instructional media was used include booklet, colored posters and real objects which include material that used for exercises including balloons, cups of

water with soap for making air bubbles, small balls and wax. Materials that used for dressing of wound such as (plaster, dressing, antiseptic solution, gloves, handling, mosquito).

All mothers who were included in the study were cooperative with the researcher. They were interested in the contents of the study especially with the handout that will remember them with all sessions contents when they forget them.

During implementation of the study, all mothers who were included in the study (n=80-100%) illustrated that their children were in need for special care from them all the time.

Program Evaluation

Before implementation of the program, the pre-test was done to the studied mothers' knowledge and practice.

After the implementation of the program, the post-test was done to the studied mothers' knowledge and practice by the same format of the pre-test evaluate the effectiveness of the implemented program, this was done immediately after the intervention and after three months.

5. Ethical Considerations:

The researcher informed that;

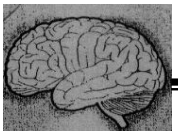
- All mothers' rights secured.
- Each subject informed the mothers about nature process on expected outcomes of the study.
- All data will be confidential and informed used only for the research purpose.
- Each study subject is informed time throughout the study.

III. Administrative Design:

An official approval of the design of the study was conducted and obtained, the title and objectives of the study were illustrated as well as the main data items to be covered, the study was carried out after gaining the necessary approval from chairman of the previously mentioned settings through a formal letters from dean of the faculty of nursing at Benha University.

IV. Statistical Design:

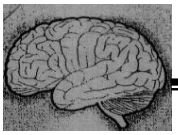
The collected data were verified prior to computerized entry; statistical analysis was done by using SPSS VII. Data were presented in the table by using mean, standard deviation, number, percentage distribution, correlation coefficient and paired T-test. $P = < 0.05$.



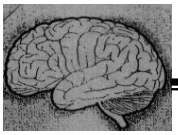
According to the findings of the exploratory phase, mothers' knowledge deficit about head injury and care of their children during head injury attack were determined. Accordingly, the general and specific objectives of the program were stated. Program content as will as teaching methods were prepared. The study tools used for assessment (questionnaire sheet, observation sheet) were used to evaluate the effect of the program.

The findings of this study can be summarized as follows:

- The mean age of children was 6.35 ± 1.96 years, more than half (56.25%) of them were males and the majority (80%) of them were in primary school.
- The mean age of the studied mothers was 27.48 ± 2.17 years. More than one third of mothers (42.5%) had technical education and most of them (75%) are not working.
- The study reflected that there was more than one fourth (32.5%) of children had their trauma symptoms four years and more and most of them (70%) were not suffer from any other type of trauma. Meanwhile, more than half (60%) of children their relatives suffering from head injury where 15% of them were relatives from the third degree for the child.

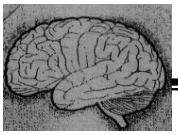


- The study illustrated that, more than half (52.5%) of children their attacks occurred during summer. Meanwhile, the minority (3.7%) of children their attacks occurred during autumn.
- Regarding source of mothers' knowledge about their child's head injury, the study should that more than two thirds (67.5%) of them had their knowledge from doctor. Meanwhile, the nurse had (6.2%) role for giving information about head injury for providing mothers with information.
- This study showed during preprogram implementation that, (62.5%) of children head their convulsions two times per-day,(56.2%) and (67.5%) of children their convulsions lasted five minutes were occurred during day and night respectively.
- After program implementation, this study showed that 66.2%, 63.8% and 60% of children their attacks were occurred once per-day, attacks lasted less than five minutes and had occurred during day respectively.
- The present study illustrated during pre-program implementation that, majority (93.7%) of mothers hadn't know the exact name and type of prescribed drug for their children. Moreover, the majority (88.8%) of those mothers were giving medication for their child only during



convulsions. After implementation of the program, there were improvement in mothers' knowledge about medication, where mean scores were X= 1.10 ± 0.30 pre program and X=1.82 ± 0.39 after program.

- Mothers' mean scores of knowledge and practice were improved significantly related to their child with head injury at the post program implementation rather than pre program implementation (X = 45.11 ± 7.97, X = 31.68 ± 6.01) respectively.
- The present study illustrated that there was a highly statistical significant differences ($P < 0.001$) between total mothers' knowledge during pre and post program implementation.
- There was a highly statistical significant differences ($P < 0.001$) between total mothers' practice during pre/post program implementation.
- Mothers' age was negatively correlated ($r=-0.09$, $P > 0.05$) with their knowledge at post program implementation. Meanwhile, there was positive correlation between their ages and their practice at post program ($r=-0.32$, $P < 0.01$).
- Working status of mothers was negatively correlated with their knowledge and practice at post program implementation ($r= - 0.12$, $P > 0.05$ and $r = - 0.15$, $P > 0.05$) respectively. Meanwhile their level of education



had positive correlation with mothers' knowledge and post program implementation ($r = -0.38$, $P<0.01$) and correlated negatively with practice ($r = -0.16$, $P>0.05$). also at post program implementation.

Conclusion:

In the light of the study findings, it was concluded that mothers' knowledge and practice related to care provided to their children with head injury was deficient as non of them had a pre-program satisfactory knowledge or adequate practice. This would have a negative effect in their ability to care of their children. Several socio-demographic factors had their reasonable effect on mothers' knowledge and practice, such as age, level of education and their working status. The developed discharge guide program was lead to significant improvements in mothers' knowledge and practice. This means that the research hypothesis that mothers' knowledge and practice will be improved after implementation of the discharge guide program and the presence of positive correlation between their knowledge and practice was achieved throughout the study.

Recommendation:

Based on the findings of the current study, the following recommendations are proposed;

- Provide mothers of children with head injury by updated pamphlets, posters and Arabic booklets about head injury which contain an action plan suitable for each child's head injury nature in order to facilitate improving their knowledge as they considered the main member in children's care team.
- Socio-demographic factors of caregivers especially mothers should be taken into account in designing an head injury educational program such as their ages and educational level.
- Mothers' knowledge and practice should be evaluated continuously through nurses to ensure the effectiveness of the provided care for their child and to achieve head injury control outcomes.
- Development of training program should be applied for nurses to improve their knowledge and practice about head injury, which will be reflected in improving mothers' knowledge and practice.