



SUMMARY

Asthma is a common lung disease of childhood throughout the world. This condition is due to inflammation of the airway passages in the lung and affects the sensitivity nerve endings in the airways so they become easily irritated. It's also accounting for many days of school absenteeism and many hospital admissions each year. However, education for children and their mothers about asthma self-management skills including; nebulizer, metered dose inhaler device, peak expiratory flow meter, breathing and coughing exercises and physical exercises; all these skills enable children and their mothers to cope with the disease and make asthma more controllable.

The aim of this study was to assess mothers' knowledge and practice about care of their children with asthma, design and implement a discharge guide program for mothers about care of their children with asthma and evaluate the effect of the discharge guide program on mothers' knowledge and practice.

◆ **Research Hypotheses:**

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

✓ The post-program knowledge and practice scores of mothers who will be exposed to the designed educational program will be higher than the pre- program knowledge and practice scores.

✓ There will be a positive correlation between mothers' 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, manipulation of the independent variable. It is like true experiments, 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 or a control group (*Burns & Grove, 1997*).

I. Technical Design:

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

♣ **Setting:**

This study was conducted in Pediatric Departments at Benha University Hospital, Chest Hospital and Specialized Pediatric 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 5 to 14 years), the researcher obtained data, in addition to this hospital, from Chest Hospital and Specialized Pediatric Hospital in Benha City as they give medication for children with asthma free.

♣ **Subject:**

A representative sample of mothers of children with asthma (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 5 to 14 years and they were free from any other chronic diseases such as DM, renal diseases and they have bronchial asthma.

♣ **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 I):

It included the following parts:

♦ Part One:

- 1- Characteristics of children, it includes; age, sex, and birth order.
- 2- Asthma characteristics, it includes; time of child's complaints, symptoms that felt by child, average occurrence of attack during a month, average length of attack, the day and year time that attack occurs, impact of asthma on child's health, if the child suffers from sensitivity, kind of it, if there is relatives complaint from chest sensitivity and then the relative relation degree for the child.
- 3- Characteristics of mothers, it includes; age, level of education, occupation, and source of mothers' information about asthma.
- 4- Data from mothers about their child's medication, it includes; name and type of the prescribed drug, method and dose as recommended, method 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- Mothers' knowledge regarding to asthma as definition, causes, symptoms (mild, moderate and severe), complications, medication and care of children during attack.

6- Mothers' knowledge regarding asthma triggering factors it includes; nutritional triggers, psychological, environmental, respiratory infection, playing and additional efforts and house animals' factors and the relation between them toward attack occurrence.

ii- Pre/post Mothers' Practice Checklist (Appendix II):

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

First; Mothers' interventions to protect their child from attack occurrence such giving prescribed medication continuously, avoiding exposure to air draft, reducing exposure for environmental triggering factors, reducing excessive muscle efforts, avoiding certain kinds of food that lead to asthma attack, encouraging breathing exercise and providing regular follow-up for the child's condition.

Second; Mothers' interventions toward dealing with their children during attack occurrence such avoiding exhausting exercises, putting the child in a good position during attack, giving fluids during attack, providing complete relaxation and complete bed rest, performing regular breathing exercise, providing mouth care giving special meals.





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 deficit about asthma and care of their children during asthma attack.

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 asthma definition, its causes, incidence, patho-physiology, 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, 2007. It was involved eight mothers of children with asthma and their children to test the applicability of the study tools and setting. Accordingly the necessary modifications were done in the form of adding or omission of some questions.



3) Field work;

The field work was carried out at November, 2007 to April, 2008. The purpose of the study was explained by the researcher to all mothers of children with asthma who included in the study. The average time needed for the completion of each interview (with mothers) was around (45-60 minutes).

A trust relation was established quickly between the researcher and the participants during the initial interview. Participants were open and comfortable speaking about their educational experiences. Mothers expressed a sincere appreciation for asthma education and handouts that were provided.

4) Program Construction;

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

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 asthma.

B. Specific objectives;

-By the end of this program, each mother should be able to:

(according to the given handout and questionnaire)

- Define asthma and asthma attack.



- Determine classification of asthma.
- Enlist types of asthma categories.
- Mention the triggering factors for asthma attack.
- Enumerate symptoms of asthma.
- Identify symptoms that refers to the worsen asthma.
- Determine lines of asthma treatment.
- List types and doses of asthma medication.
- Discuss methods that should be followed to avoid asthma attack.
- Determine the nutritional requirements that should be given to the child.
- Perform breathing and body exercises for the child.
- Apply interventions for the child during asthma attack.

Program implementation:

Implementation of the program was carried out at the previously mentioned settings. The subject material used has been sequenced through the 18 sessions, 10 sessions for theory and 8 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, each group includes about 4 to 5 mothers (depends on mothers' circumstances) in each session and the content was implemented for each group at every session separately for 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 metered-dose inhaler, materials that used for breathing exercises including balloons, cups of water with soap for making air bubbles, small balls and wax.

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:

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 to evaluate the effectiveness of the implemented program, this was done immediately after the intervention.

5) Ethical considerations:

-The researcher informed that;

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





4- 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 V11. 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 asthma and care of their children during asthma attack were determined. Accordingly, the general and specific objectives of the program were stated. Program content as well 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 7.35 ± 1.69 years, more than half (51.2%) of them were females 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 (45%) had technical education and most of them (78.7%) are not working.

◦ The study reflected that there was more than one fourth (32.5%) of children had their asthma symptoms since labor and most of them (70%) were not suffer from any other type of sensitivity. Meanwhile, more than half (56.2%) of children their relatives suffering from asthma, where 22.5% of them were relatives from the first degree for the child.

◦ The study illustrated that, more than one third (40%) of children their attacks occurred during winter. Meanwhile, the minority (2.5%) of children their attacks occurred during summer.

◦ Regarding source of mothers' knowledge about their child's asthma, the study showed that more than two thirds (67.5%) of them had their knowledge from doctor. Meanwhile, the nurse hadn't (0%) any role for giving information about asthma for providing mothers with information.

◦ This study showed during pre-program implementation that, 62.5% of children had their attacks two times per month, 65.2% and 67.5% of children their attacks lasted from 30 to 45 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 month, attacks lasted from 15 to less than 30 minutes and had occurred during morning respectively.





◦ The present study illustrated during pre-program implementation that, majority (88.8%) of mothers hadn't know the exact name and type of prescribed drug for their children. Moreover, the majority (93.7%) of those mothers were giving medication for their child only during attack. After implementation of the program, there were improvement in mothers' knowledge about medication, where mean scores were $\bar{X} = 1.10 \pm 0.30$ pre program and $\bar{X} = 1.82 \pm 0.39$ after program.

◦ Mothers' mean scores of knowledge and practice were improved significantly related to their child with asthma at the post-program implementation rather than pre-program implementation ($\bar{X} = 44.11 \pm 6.97$, $\bar{X} = 30.68 \pm 5.01$) 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 ($r = -0.34$, $p < 0.01$).

◦ Working status of mothers was negatively correlated with their knowledge and practice at post-program implementation ($r = -0.11$, $p > 0.05$ and $r = -0.17$, $p > 0.05$) respectively. Meanwhile their level of education had positive correlation with mothers' knowledge and post-



program implementation ($r = -0.39$, $p < 0.01$) and correlated negatively with practice ($r = -0.18$, $p > 0.05$).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 bronchial asthma was deficient as non of them had a pre-program satisfactory knowledge or adequate practice. This would have a negative impact in their ability to care of their children. Several socio-demographic factors had their reasonable impact 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.

***Recommendations:**

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

- ❖ Provide mothers of children with bronchial asthma by updated pamphlets, posters and Arabic booklets about asthma which contain an action plan suitable for each child's asthma 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 asthma 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 asthma control outcomes.
- ❖ Mothers' wrong practice about their child's asthma compliance related to giving controllable medications and the regularity of follow-up for the child's condition should be corrected through health teaching.
- ❖ Nurses should play a key role in the health teaching and counseling mothers about care of their children with asthma.
- ❖ Development of training program should be applied for nurses to improve their knowledge and practice about bronchial asthma, which will be reflected in improving mothers' knowledge and practice.
- ❖ Nurses in the out-patient clinic or pediatrics departments should be trained well and supplied with information and training asthma programs as they are the main source of mothers' information during providing the child by the needed care.