

Impacts of Empowerment Strategies on Mothers' Coping Abilities among Asthmatic Children at Dawadmi Governorate, K.S.A

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Abstract: Background: Bronchial asthma is one of the most prevalent chronic lung diseases among children in Saudi Arabia. Morbidity and mortality associated with asthma has continued to increase despite advances in treatment and management. Improve maternal knowledge about asthma and Increase their coping abilities through the empowerment strategies will be expected to have a good impact on interventions of their asthmatic children, decrease the prevalence of complications, increase compliance with management as well as improve prognosis of the disease process and general health of the asthmatic children. **Objective:** Was to assess maternal knowledge, practice and coping abilities with asthma and to evaluate the impacts of the empowerment strategies on mothers' knowledge, practice and coping abilities. The study was conducted at pediatric department of Al- Dawadmi General Hospital, Al Dawadmi Governorate, Kingdom of Saudi Arabia. **Methods:** A sample of 50 asthmatic children mothers was included in the study. Interviewing questionnaire sheet and coping inventory scale were used to collect the required data (Pre and post empowerment strategies test were done). Data were collected in 4 phases (initial, developmental, implementation and evaluation). **Results:** The results revealed that most of asthmatic children were males (60%), 80% of them had positive family history and all of them (100%) were exposed to asthma triggers before asthma attacks. In total, 10%, 26% of mothers used nebulizer and O₂ mask correctly pre the intervention compared with 80% of them post intervention for both items. Only 12% of mothers avoided exposure to asthma triggers pre the intervention which changed significantly post the intervention where we found 86% of them avoided exposure to triggers. The minority of mothers (6%) had high coping abilities with asthma pre the empowerment strategies, which changed significantly post the empowerment strategies where we found 70% of them had high coping abilities. The results also demonstrated significant change in the disease prognosis and in the asthmatic children general health due to the impacts of the empowerment strategies. **Conclusion:** It was concluded that asthma is a common health issues affecting children with sometimes life threatening consequences that need continuous nursing intervention to improve disease prognosis, reduce severity of outcomes, reduce complications and improve maternal coping abilities.

INTRODUCTION:

Asthma is a chronic illness that places a substantial burden on family, health care services and on society as a whole. In children, it impairs ability to enjoy, it affects

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sleep patterns and school attendance. In adults, it affects the quality of life and days of work.⁽¹⁾ It is widely accepted that there is an increase in morbidity and mortality due to bronchial asthma.⁽²⁾ Asthma is a common health condition that affects 5-10% of the population worldwide. More than 22 million Americans affected with asthma, it is the most common childhood illness affecting approximately 9 million children in the United States. In the Kingdom of Saudi Arabia, the prevalence of asthma was 12% with vast regional variations ranging from 10% to 23%. Incidence among Saudi school children varies from 10-17%.⁽³⁾ Bronchial asthma is a chronic relapsing inflammatory disorder with increased responsiveness of tracheo-broncheal tree to various stimuli, resulting in paroxysmal contraction of bronchial airways.⁽⁴⁾

Asthma inflammation is produced by allergies, respiratory infections, and airborne irritant. This airway inflammation

can cause scarring if it goes on for a long period of time. ⁽⁵⁾ Asthma attacks are usually characterized by difficulty in breathing, frequent coughing, wheezing or shortness of breath after physical activities, sweating of the palms of the hands, constriction& pain in the chest and a tendency for allergies.⁽⁶⁻⁸⁾ Infections, allergens ,exercise, air pollution, toxins, weather, drugs ,emotional stress, anxiety, smoking and perfumes are the most asthma triggers.⁽⁹⁻¹¹⁾ Respiratory failure, pneumonia, and psychological complications are the most common complications of asthma.⁽¹²⁻¹⁴⁾ Although death from asthma is rare, the death rate has been increased in recent years. The adolescent age group appears to be the most vulnerable, with the greatest increase in the occurring range in age 10-14 years, no reliable data to explain this increase.⁽¹⁵⁾

Anti-inflammatory drugs, bronchodilators, multivitamins especially vitamin C and zinc should be given according to the child's

age are given to manage the child with asthma. However, possibly the best treatment is prevention by monitoring the child's surroundings and activities.^(16 - 19)

Within the Kingdom of Saudi Arabia parents should be familiarized themselves with frequent vacuuming of all hard surfaces and furniture, reduces fine dust and sand particles which normal cleaning may not catch it.⁽¹⁾ Keeping curtains and bedspreads laundered reduces the dust particles which spread into the air within the home.⁽²⁾ Furthermore, use of a humidifier is a very useful tool to add moisture to a dry area, and dehumidifiers can be helpful for those in humid coastal regions.⁽¹⁹⁾ For those children who suffer from severe asthma, it may be advisable to have medical quality facial masks available at all times. Reducing or eliminating allergens and other lung irritants will decrease the number and severity of attacks that a child may experience.⁽²⁰⁾ Additionally, it is vital that all health

information is available to school personnel to alert them to any possible risks which may occur in the school setting.⁽²¹⁾

Coping is the things that people do to avoid or minimize the stress that result from problematic conditions of life; it involves both having resources and using various coping strategies. Coping resources at the individual level include one's education, income, self-esteem, sense of mastery, and psychological hardiness, all of which affect one's ability to deal effectively with life strains. Coping strategies are the actual behaviors or responses people use in dealing with stressful events. Two general coping strategies have been distinguished: problem-solving strategies (are efforts to do something active to alleviate stressful circumstances) and emotion-focused coping strategies (involve efforts to regulate the emotional consequences of stressful or potentially stressful events).⁽²²⁻

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Empowerment was conceptualized as a social process of recognizing, promoting and enhancing people's abilities to meet their own needs, solve their own problems, and mobilize the necessary resources in order to feel in control of their own lives. Components of empowerment are discovering reality, critical reflection, taking charge, and holding on. It is a personal process in which individuals developed and employed the necessary knowledge, competence and confidence for making their voices heard. It may be generally defined as "the ongoing capacity of individuals or groups to act on their own behalf to achieve a greater measure of control over their lives."⁽²⁵⁾

Empowerment is an ongoing process of enabling individuals and groups to improve capacities, to critically analyse situations and to take actions to improve those situations. It was stated that if women are empowered, or given good status, the health and survival of their children should

be improved. There is a positive association of infant health and survival with women's education and their empowerment. Mothers who received the empowerment program: provided more support to their children; reported less negative mood state and less parental stress related to their children's emotions and behaviors; and reported fewer post-traumatic stress symptoms and less parental role change.⁽²⁷⁻²⁸⁾

Subject and methods:

Aims of the study: Was to assess maternal knowledge, practice of care and coping abilities with asthma and evaluate the impacts of the empowerment strategies on maternal knowledge, practice of care and coping abilities.

Setting: The study was conducted at inpatient department and follow up of cases was done in outpatient clinic of pediatric department at Al Dawadmi General Hospital, al Dawadmi Governorate, Kingdom of Saudi Arabia.

Sample : A sample of 50 asthmatic children mothers was included in the study .

Selected mothers should had the following criteria:

- Their children ages ranging from 2- 6 years.
- Both sexes were included.
- Their children diagnosed as asthmatic.

Methods: The required data were collected through using :

A). An Interviewing questionnaire sheet consisted of 6 parts:

- Part 1: Socio- demographic data of children and their families.
- Part 2: Asthmatic children medical history.
- Part 3: Impacts of the empowerment strategies on mothers' knowledge about asthma.
- Part 4: Impact of the empowerment strategies on mothers performance of care.
- Part 5: Impact of empowerment strategies on disease prognosis.

- Part 6: Impacts of the empowerment strategies on the asthmatic children general health. (pre and post empowerment strategies were done for parts 3, 4, 5 and 6 of the questionnaire)

B. Coping inventory scale: ⁽²⁶⁾

It was used pre and post the empowerment strategies to assess maternal coping abilities. The scale formed from 33 items which enlisting ways that people sometimes used to cope with stressful life events. The researcher red each item of the scale list to the mother and ask her if she applied it or not. A score from 0-2 was granted for each item according to the response. If the items were not applied it takes 0, if the item applied occasionally but not helpful, it takes 1 and if the item applied always and found very helpful it takes 2. The maximum score was 66. The coping ability was rated from low to high, low if the score was 0-22, moderate if the score was 23-44 and high if the score was 45-66 it was used pre and

post the empowerment strategies.

Data collection methods:

1. **Initial phase:** Data were collected from the 1st of January to the end of August 2008; during this period all mothers admitted with their asthmatic children according to the previous criteria were included in the study. All of them were interviewed individually for filling the questionnaire and the coping inventory scale (pre test format).

2. **Developmental phase:** Based on the need assessment data and the objectives, theoretical and practical contents of the empowerment strategies were developed by the researcher. It was included information about asthma and its management, coping strategies, how to cope with asthma, importance of complying with the management and empowerment strategies.

3. **Implementation phase:** Mothers

were interviewed in groups that ranged from 5-7 mothers during their children hospitalization period. The intervention was given in 5 sessions. Each session started by revision of the previous session. The 1st session used for orientation, helping mothers to express their feeling, filling the questionnaire and coping inventory scale (pretest format). The 2nd session for discussing the theoretical information of the disease as (introduction, definition, predisposing factors, clinical picture, complications, treatment and care). The 3rd session for demonstrating nebulizer, inhaler use, o₂ mask and air humidifier. The 4th session for practical demonstration of coping strategies with asthma by training mother to solve asthma problems, how they control their emotions through religious, use supportive resources and empower their abilities. The 5th session for revision, answering

mothers' questions. Post discharge from hospital the researcher met asthmatic children and their mothers at outpatient clinic monthly for refreshment of their knowledge and answering their questions. Post tests were done at outpatient clinic during their follow up at the end of 3rd month.

4. **Evaluation phase:** The impacts of the empowerment strategies on mothers coping abilities, knowledge and practice of care were assessed by comparing the results of pre and post empowerment strategies test format.

Statistical analysis:

Statistical presentation and analysis of the present study was conducted, using chi-square test by SPSS V.16. Chi-square the hypothesis that the row and column variables are independent, without indicating strength or direction of the relationship. Pearson chi-square and likelihood-ratio chi-square. Fisher's exact

test and Yates' corrected chi-square are computed for 2x2 tables.

Results:

Table 1 reveals that asthmatic male children (60%) were more than female ones (40%) and more than one third of the asthmatic children were less than 2 years of age (40%). Additionally 36% of mothers were illiterate and half of them(50%) had low income (the researchers consider high income > 4000 riyals monthly, middle income 2000- < 4000 riyals monthly and low income < 2000 riyal monthly). Table 2 shows that the majority of asthmatic children (80%) had positive family history of asthma, all of them had asthma triggers (100%) and 80% of them had parents consanguinity (researchers opinions in Dawadmi most people married their relative in their families so that most of asthmatic children had positive family history of asthma .)

Table1: Socio demographic data of asthmatic children and their mothers'

Socio demographic variables	No= 50	%
1. Sex:	30	60
• Male.	20	40
• Female.		
2. Age in years.		
• < 2.	20	40
• 2-< 4.	16	32
• 4 - 6	14	28
3. Birth order:		
• 1-3	15	30
• 4-6.	20	40
• > 6.	15	30
4. Family size:		
• 3- 5.	15	30
• 6- 8.	20	40
• More than 8.	15	30
5. Maternal age in years:	N= 50	%
• 20 – <30	10	20
• 30 – <40.	20	40
• 40 – 50.	20	40
6. Maternal educational level:		
• Illiterate.	18	36
• Read and write.	20	40
• Elementary school.	10	20
• Secondary school	2	4
7. Family monthly income:		
• High(> 4000 riyal)	5	10
• Middle(2000- < 4000 riyal).	20	40
• Low(< 2000 riyal).	25	50

Table 2: Asthmatic children medical history.

Medical history	N0= 50	%
1. Family history of asthma. <ul style="list-style-type: none"> • Positive. • Negative. 	40 10	80 20
2. Asthma Triggers. <ul style="list-style-type: none"> • Present. • Absent. 	50 0.0	100 0.0
3. Parents consanguinity <ul style="list-style-type: none"> • Present. • Absent. 	40 10	80 20

Table 3, shows that, one fifth of mothers (20%) defined asthma correctly and reported the asthma triggers pre the intervention compared with 82% and 84% post the intervention for both items respectively, 16% mothers had correct knowledge about treatment and 28% of them had also correct knowledge about management pre the empowerment strategies compared with 80% and 78% post the empowerment strategies for both items respectively.

As clear from table 4, only 10% ,26% of mothers used nebulizer and o₂ mask correctly pre the empowerment strategies which changed significantly post the intervention where we found 80% of them used nebulizer and o₂ mask correctly. From this table also it is clear that the majority of the mothers avoided asthma triggers(86%) and provided suitable diet to their children(78%) post the empowerment strategies compared to only 12% and 26% pre the empowerment strategies for both items respectively .

Table 3: Impact of the empowerment strategies on maternal knowledge.

Areas of knowledge	Pre		Post		X ²	P value
	No=50	%	No= 50	%		
1. Definition: • Correct answer. • Wrong answer.	10 40	20 80	41 9	82 18	16.36	0.002
2. Triggers: • Correct answer. • Wrong answer.	10 40	20 80	42 8	84 16	19.36	0.009
3. Clinical picture: • Correct answer. • Wrong answer.	20 30	40 60	45 5	90 10	27.36	0.003
4. Complications: • Correct answer. • Wrong answer.	7 43	14 86	41 9	82 18	14.231	0.017
5. Treatment: • Correct answer. • Wrong answer.	8 42	16 84	40 10	80 20	11.36	0.011
6. Management: • Correct answer. • Wrong answer.	14 36	28 72	39 11	78 22	25.09	0.002

(N.B.: Researcher consider mother who answer 60% or more of the answer give correct answer related to each items separately.)

Table 4: Impacts of the empowerment strategies on mothers' performance of care.

Areas of Performance	Pre		Post		X ²	P. value
	No	%	No	%		
1. Nebulizer use. • Correctly. • Incorrectly.	5 45	10 90	40 10	80 20	29.360	0.002
2. Inhaler use • Correctly. • Incorrectly	13 37	26 74	44 6	88 12	19.361	0.003
3. O ₂ mask use. • Correctly. • Incorrectly	13 37	26 74	40 10	80 20	29.27	0.001
4. Humidified air. • Used. • Not used.	9 41	18 82	37 13	74 26	31.56	0.003
5. Avoid triggers. • Avoid. • Not avoid.	6 44	12 88	43 7	86 14	18.325	0.007
6. Suitable diet. • Provide. • Not provide.	13 37	26 74	39 11	78 22	27.08	0.001

(N.B.: Researcher use checklist and consider mother who perform 60% or more of the skills perform correctly related to each items separately.)

Table 5, shows that only 30% of children regular and 80% complies with the management post the intervention compared with 76% pre the compared with 20% and 24% pre for both items respectively.

Table 5: Impacts of the empowerment strategies on asthmatic children disease prognosis.

Impacts	Pre		Post		X ²	P. value
	No	%	No	%		
1. Hospitalization rate: • < 6 months. • 6-12 months. • > one year.	38 5 7	76 10 14	15 18 17	30 36 34	21.512	0.001
2. Hospitalization stay: • < one week. • 1-2 weeks. • > 2 weeks.	2 15 33	4 30 66	27 10 13	54 20 26	31.025	0.001
3. Severity of symptoms: • Severe. • Moderate. • Mild.	27 13 10	54 26 20	15 10 25	30 20 50	13.102	0.024
4. Follow up: • Regular. • Irregular.	10 40	20 80	43 7	86 14	22.365	0.001
5. Management compliance: • Comply. • Not comply.	12 38	24 76	40 10	80 20	31.41	0.003

N.B.(symptoms were considered severe if occurring every hour and the child was tired physical and psychological, moderate if occurring every hour but the child not tired and mild if occurring more than this and the child was not tired)

Table 6 demonstrates that 64% of children perceived by mothers) post the had weight progress (according to their empowerment strategies compared with age), 70% had comfortable sleeping 24%, 12% and 16% pre intervention of the pattern and 64% had good appetite(as above items respectively. Table 7,

demonstrate that only 6% of mothers had high coping abilities with asthma pre strategies compared with 70% post the empowerment strategies.

Table 6: Impacts of the empowerment strategies on asthmatic children general health.

General health items	Pre		Post		X ²	P. value
	No	%	No	%		
1. Weight progress. • Present. • Absent.	12 38	24 76	32 18	64 36	16.23	0.013
2. Sleep pattern: • Insomnia. • Crying. • Comfortable.	32 12 6	64 24 12	5 10 35	10 20 70	24.36	0.001
3. Appetite: • Anorexia. • Good (eat normally)	42 8	84 16	16 32	36 64	26.03	0.001

Table 7: Impact of the empowerment strategies on mothers' coping abilities.

Coping abilities	Pre		Post		X ²	P. value
	No=	%	No=	%		
• Low . • Moderate. • High.	37 10 3	74 20 6	5 10 35	10 20 70	28.320	0.007

Discussion:

Asthma is the most common chronic disease in children. It is a good example of multifactorial diseases, which is common worldwide.⁽⁸⁾ The present study revealed that most of asthmatic children are male with low income this finding agree with Kaur, 1998 ⁽⁵⁾ who reported that asthma is more prevalent in male children with low

socioeconomic condition. The majority of asthmatic children in the study had positive family history, exposed to environmental triggers and had parents consanguinity. This finding agree with El Gamal et al, 1993 ⁽¹⁾ who reported that there was a high positive correlation for getting asthma if the parents also suffered from it, therefore he suggested that asthma may be inherited in the Saudi population.

The majority of mothers in our study had not correct information about bronchial asthma pre intervention their knowledge changed significantly post the intervention. This finding agree with Von Mutius, 2000 ⁽¹⁰⁾ who reported that parents education about chronic illness is important to increase their knowledge and improve their children disease prognosis. There is a consensus that health instruction is very important and has potential to instill a more positive out look in children with chronic illness, reduce school absence, control the disease outcome and improve children

ability as reported by El Mouzan, 2007 ⁽²⁴⁾

Mothers' performance of care were changed significantly post the empowerment strategies, this finding coordinated with Adams, 2004 ⁽¹⁶⁾ who reported that acquiring knowledge will improve performance. More than half of mothers had high coping abilities post due to the effect of empowerment strategies. This finding agree with American lung association, 2005 ⁽¹⁷⁾ which suggest that parents' or caregivers' ability to manage or cope with chronic stressors could potentially protect children from the risks associated with asthma, coping style has an important role in disease outcome, their coping abilities with the disease depend on their knowledge about it. Also Howard, 2002 ⁽²⁷⁾ reported that mothers who received the empowerment strategies: provided more support to their children during intrusive procedures; reported less negative mood state and less parental stress related to their children's emotions

and behaviors; and reported fewer post-traumatic stress symptoms and less parental role change.

From the finding of this study the impacts of the empowerment strategies on children and their mothers were clear which lowered the hospitalization rate, maintain compliance with management, improve the illness prognosis, improve weight progress, promote comfortable sleeping pattern, and good appetite. This finding agrees with Adams, 2004⁽¹⁶⁾ who reported that parents education about their children disease process will improve interaction with their asthmatic children which maintain compliance with management and at the end improve the disease prognosis, outcomes and children general health. Also Florian, 1998⁽²⁵⁾ stated that if women are empowered, or given good status, the health and survival of their children should be improved. There is a positive association of infant health and survival with women's education and

their empowerment level. Also Quarrie, 2009⁽²⁸⁾ reported that effective women empowerment strategies which improve maternal ability and health education affect her health and affect her children physical and psychological health.

Conclusion: Mothers empowerment strategies had great impacts on mothers coping abilities, on children general health and disease prognosis.

Recommendations:

- 1 . It is recommended to conduct excess epidemiological studies to investigate prevalence, incidence and causes of asthma in Saudi population.
- 2 . Provide student' school with condensed programs about prevention and management of asthma.
- 3 . Educating parents about prevention and control of asthma during their contact with hospital or MCH centers.
- 4 . In Saudi Arabia at the community level there is a great need for preventing exposure to asthma triggers (physical

and psychological) in homes, schools and other community settings.

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