Effectiveness of Maternal Training Program on Improvement of Care Provided to Their Children With Cerebral Palsy at Zagazig University Hospitals

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Abstract

Background: Cerebral palsy (CP) is a permanent disorder of posture and movement resulting from brain damage occurring in the young child. **Aim of the study was** to assess the effectiveness of maternal training Program on improvement of care provided to their children with cerebral Palsy at Zagazig University Hospitals **Subjects methods: Research design,** A quasi-experimental design was utilized in the present study .**Setting:** This study was conducted at Zagazig University Hospitals. **Subjects:** include 50 mothers and their children. **Tools of data collection: Two tools** were used in this study. **The first** was questionnaire interview sheet .**The second** was mothers reported practice of daily care activities. Counseling sessions for mothers were developed by the researcher. **Results** indicated that 24.0% of studied mothers their reported practice was Satisfactory . And improved to 50.0% & 48.0% respectively for both after and follow up implementation of educational module. **Conclusion:** In the light of the current study findings, it might be concluded that the educational module among studied mothers had a positive effect on improving their practice about care of their children with cerebral palsy as there was a statistical significant difference throughout the three phases of the study **Recommendations:** included that Educational sessions should be provided for mothers of cerebral palsy children about care of their children, as well as, community resources from whom they may seek assistance and support to fulfill with all dependency

Keywords: Maternal Training Program, Cerebral palsy**,** children

Introduction:

Cerebral palsy (CP) is the most common physical disability in childhood. CP comprises a heterogeneous group of disorders that are the result of a non-progressive disruption or injury that occurred during fetal brain development or within the first two years of life [(1)]. This disruption can result in spasticity, dystonia, muscle contractures, weakness and difficulty in coordination that ultimately affects the ability to control movements. Resultant activity limitations may affect gross motor movements, fine motor movements, speech and communication, as well as eating and drinking [(2)]

Cerebral Palsy may be caused by damage to the parts of the brain that control movement. This damage generally occurs during the fetal or perinatal period, particularly in premature infants [(3)] .Common prenatal causes are separation of the placenta, bleeding, maternal infection and nutritional deficiencies. Meanwhile, perinatal causes are anoxia immediately before, during and after birth, asphyxia, and birth trauma occurring after birth[(4)]. Common postnatal causes are head trauma, infection and cerebrovascular accident [(5)]

The incidence of CP was greater in premature and low birth weight infants. It was estimated that, approximately 2 to 2.5 of every 1000 live born children in developed countries have CP [(6)]. Cerebral Palsy is the leading cause of physical disability in early childhood [(5)]. In the UK, one in 400 children has CP while, in El kharga district, Egypt, 52 of 25, 540 Children have CP, giving a prevalence of 2.04 per 1, 000 live births [(7)].

Cerebral Palsy is classified according to the affected limb to spastic CP which accounts for 65.5% of all cases and was classified into diplegia, hemiplegia, monoplegia and quadriplegia [8]. Ataxic and dyskinetic CP representing 3.8% for each while mixed type accounting for 26.9% [6] .

It is diagnosed in the first 18 months of life for most of children when they fail to attain the motor milestones or when they show specific abnormal signs such as asymmetric gross motor functions, hypertonia or hypotonia [9]. Movement and posture problems are present in all CP children and some of them have some level of intellectual disability, seizures, abnormal physical sensation, impaired vision or hearing, speech problems and bladder and bowel control problems[1] .

Mothers as caregivers may not fulfill their roles due to lack of understanding to the physical, psychological, emotional, and social needs of their child. They like to help themselves and sometimes form own help groups and arrange friendships and events, etc. In general, they receive little support from relatives, friends and neighbors. [9]

Significance of the study

Mothers of the children with CP are vital member of the professional team; the most important role of them is the lifelong interest in the commitment to their children. They may feel helpless and confused, so that they need information, intervention and support to rehabilitation program and learn to manage the practical difficulties, which can disrupt the developing relationship with their children[10] . Accordingly this study is conducted to emphasize on the effectiveness of applying of maternal training program on improvement of care provided to their children with cerebral palsy [11] .

Aim of the study:

The aim of the present study was to

Evaluate the effectiveness of maternal training Program on improvement of care provided to their children with cerebral Palsy at Zagazig University Hospitals.

Research Questions:

1. Do mothers have appropriate reported practice regarding care of their children with cerebral palsy or not?

Subjects and methods:

Research design:

A quasi experimental design was used

Study setting:

1. Pediatric Hospital at Zagazig University Hospitals.(15mothers with their children)
2. Pediatric neurology outpatient clinic at Zagazig University Hospitals.(20 mothers with their children)
3. Pediatric speech outpatient clinic at Zagazig University Hospitals(15 mothers with their children)

Study subjects:

The subjects of this study included convenience sample of 50 mothers having children with cerebral palsy in the above mentioned setting .

Inclusion criteria of children :

1). Age: from 4- 12 years.

2) . Sex: Both sex.

Characteristics of studied mothers:

1) Accept to participate in the study.

2) Did not attend any training program about CP

Tools of data collection:

Two tools would be used to collect the data.

Tool (I): A questionnaire interview sheet A questionnaire interview sheet was developed by the researcher, designed in Arabic language and it consists of the following data:

Part 1: Characteristics of both mothers and children

A) Mothers: personal data such as age, level of education, occupation and number of children in the family as well as family income.

B) Children characteristics such as age, sex, birth order, medical history of the disease.

c) Medical and family history of the studied mothers and their children

Tool I: Mothers reported practice

Assessment of mother's reported practice of daily care activities provided to their children with cerebral palsy (feeding, movement, walking, wearing clothes, bathing, hair combing, teeth brushing, excretion, playing and sporting activities , sleeping , communication) (pre , post and follow up format). It included 11 items. The total score was 22 marks

Scoring system of **mother's reported practice**

Mother's total score was classified as follows:

-Satisfactory ≥ 60.

-Unsatisfactory<60

Validity and reliability

It was established by a panel of three experts in nursing and medical staff including: two professor of pediatrics medicine and one professor of pediatrics nursing who reviewed the instruments, and designed booklet for clarity, relevance comprehensive, understanding, applicability, and easiness for administration. Minor modifications were required

The reliability of the tool was done by using Cronbach's Alpha test which was used to measure internal consistency of the used tool The reliability scores of the tool was 0.82which indicates the high tool internal consistency of the used tool

Field work:

The educational module was developed through four phases as follows:

a- Assessment phase:

The educational module was constructed for the assessment of mothers' practice. The assessment was performed before the implementation of educational module by interviewing each mother individually to assess their reported practice (pretest) after explaining the aim of the study and had their approval to participate in the study

b- Planning phase

Based on the results obtained from the interview sheet and from pilot study and assessment phase as well as reviewing the related literature the educational module was developed by the researcher. Detected needs, requirements and deficiencies were translated into the aim and objectives of the educational module. The contents of the educational health module were selected on the basis of identified needs.

C- Implementation phase.

The educational module of the study was implemented through ten sessions in which mothers were divided into small groups to facilitate the learning process. The length of each session differed according to the content and mother's responses and ranged 30-45 minutes. In the first session, give information about definition, causes, clinical picture and associated difficulties of Cerebral palsy. The second session included types of cerebral palsy ,investigation , prevention and treatment of CP. The third session included information regarding eating and drinking training. The fourth session was about sleep training. The fifth session was about movement and walking of the child . The sixth session was about teething, and hygiene training. The seventh session was about training for dressing. The eighth session was about training for defecation. The ninth session about training for playing and

sporting activities and finally the tenth session was about communication

D-Evaluation phase

In this phase, every mother of the studied sample were interviewed individually and immediately after implementation of the educational module to assess their reported practice using a post- test.

Also, two months later the mothers of the studied sample were reassessed for their reported practice

Pilot study

A pilot study was conducted on 10% of the mothers to evaluate the content of the tools, their clarity as well as to estimate the time needed for filling the sheets with the collected data &any modification was done

-Administrative and Ethical considerations:

The agreement for participation of subjects was obtained after the explanation the aim of the study to mothers included in the study. They were given opportunity to refuse to participate. They were notified that they could withdraw at any stage of the research. Also, they were assured that information would be confidential and used for research purpose only

Statistical analysis:

Data was analyzed using SPSS (Statistical Package for Social Sciences) version 15. Qualitative data was presented as number and percent. Comparison between groups was done by Chi-Square test. $P < 0.05$ was considered to be statistically significant.

Results:

Characteristics of the studied mothers were shown in **table (1)**. It was revealed that 58.0% of studied mothers in the age group 30 to<40 years, and those who were at age of 40 to 54 years constituted 10.0% ,with mean age of 32.41±8.65years.

As regard mothers educational level, It was found that 38.0% were illiterate .while 28.0 % of mothers had secondary education. And only18.0% graduated from university .

Regarding occupation, the present study showed that 66.0% of studied mothers were housewives and only 34.0%were working .in relation to family monthly income ,it was revealed that 80.0%of studied mothers had insufficient income compared to 20.0%had sufficient

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Figure (1): illustrated the source of studied mothers knowledge about CP . it was found that 90% of studied mothers obtained their information from relatives &8.0% from physician

Table (2): shows the characteristic of studied children with cerebral palsy .Regarding to the age ,it was found that 44.0% were at age group from 10 to 12years , with mean age 7.78±3.3.as regards to the sex , it was shown that 66.0%were males compared to 34.0%of studied children were females

It was also found that 76.0% of studied children ranked the first- born, while second –born were constituted 18.0%, the results revealed that 74.0% of studied children were from rural areas compared to 26.0% from urban.

Table (3): Revealed Impact of the Educational Module on the Studied mothers' regarding reported Practice of daily care activities throughout the Module Phases. It was found that 16.0% of the studied children were partially dependent on their mothers for feeding before implementation of the educational module. The previous percentage increased to 40.0 % after implementation of the educational module. The difference was statistically significant **.**

The same table indicated that before implementation of the educational module, 24.0% of the studied children were partially dependent on their mothers for excretion. This percentage increased to 54.0% after implementation of the educational module and slightly decreased to 48.0% during follow up phase.

Regarding playing and sporting activities 24.0% of the studied children were partially dependent on their mothers before implementation of the educational module. This percentage increased to 58.0% after implementation of the educational module and slightly decreased to 54.0% during follow up phase. According to sleep, 50.0% of the studied children were partially dependent on their mothers before implementation of the educational module. This percentage increased to 58.0% after implementation of the educational module.

The same table indicated that before implementation of the educational module 22.0% of the studied children were partially dependent on their mothers for communication. This percentage increased to 52.0% after implementation of the educational module. The difference was statistically significant

Table (4) Impact of educational module on total mothers' reported practice score was portrayed in table (4) . It was revealed that 24.0% of the studied mothers had satisfactory reported practice score before implementation of the educational module. This percentage increased to 50.0% after implementation of educational module.

Discussion:

Cerebral palsy (CP) is the most common pediatric disability causing long-term functional limitations. Children with CP most often are presented with multiple impairments, activity limitations and participation restrictions**.** Most children require lifetime extensive assistance in functional day to day activities Ones [12]

A good educational program will encourage an open exchange of information, offer respectful and supportive care, and encourage partnership between parents and the health care professionals who work with them. So, the nurse has responsibility to help the care givers specially the mothers to manage their time and effort and teach them about the disease and how to care for their CP children Afifi [13]

Regarding to mothers' characteristics, the present study showed that nearly half of studied mothers were in the age group 30 to<40 years. This finding was in agreement with Davis et al., [3] who conducted study about The impact of caring for a child with cerebral palsy: quality of life for mothers and fathers and found that half of studied mothers aged from 30 to 40 years, and disagreement with Mostafa et al., [14] who showed in their study about "parents' adjustment for caring of cerebral palsy children" that, nearly half of the mothers of CP children were in the age 50 years. These results may explain the view of Adam et al., [15] who mentioned in his study that, the mothers should be in suitable age to be able to assume responsibility appropriately toward children because, young mothers are usually unprepared psychologically for parenthood duties

As observed from the present study, one third of studied mothers were illiterate. This finding un matched with Mahmoud etal., [16] who found in their study about Effect of an Educational Program on Mothers Care for Their Children with Cerebral Palsy and Its Effect on Their Quality of Life. that, more than two thirds of the studied mothers were illiterate. This result may explain that, the educated mothers had more information and positive attitude than illiterate mothers

In relation to family monthly income, it was revealed that the majority of studied mothers had insufficient income. This finding was similar with Afifi [13] who found that family monthly income was insufficient. This may be highlighted;

that when the mother is uneducated, means lower health awareness and low income and inability to help throughout child's life.

Studied mothers revealed that source of information regarding their children's disease, was mostly given by the relatives. This was in agreement with Mahmoud etal., [16] It was found that, the mothers' source of information regarding practice for caring with their children (feeding, hygiene, teeth care & toileting) were mostly given by their relatives. This may be related to that most of studied mothers were illiterate, while the source of information for the minority of them were obtained from medical team or physiotherapist of rehabilitation centers.

Concerning the socio-demographic characteristic of the studied children, the results of the present study showed that nearly half of studied children with cerebral palsy were at the age group from 10-12 years with a mean age 7.78±3.3 years. This finding goes in line with Allah etal., [17] Who found in his study about Improving the Care Provided to Hemiplegics Cerebral Palsy Children by Their Family Caregivers that half of studied children aged 10-12 years.

In relation to gender, many studies reported that a higher incidence was among males than females in both developed and developing countries**.** Mahmoud [18]. The present study showed that nearly two third of studied children were males and this could be due to the greater biological vulnerability of male infants compared to females or might be due to genetic factors as males were at greater risk of prematurity which is the main leading cause of cerebral palsy. This was in agreement with Yeargin et al., [19] who found in his study about Prevalence of cerebral palsy in children in three areas of the United States, that half of studied children were males.

The finding of the current study also comes in accordance with El-Tallawy et al., [7] They stated study about Epidemiology of cerebral palsy in El-Kharga District-New Valley (Egypt). And found that, half of studied children with cerebral palsy were ranked to a first child. This could be due to the lack of mother tendency toward prenatal, perinatal and postnatal follow up especially in low socioeconomic status.

Regarding to impact of the Educational Module on the Studied mothers' reported Practice of daily care activities throughout the Module Phases. It was found that 16.0% of the studied children were partially dependent on their mothers for feeding before implementation of the educational module. The previous percentage increased to 40.0 % after implementation of the educational module. There was statistically significant This result was supported by Mohamed[19] who found in his study about, Nutritional Rehabilitation for Infants and Children with Cerebral Palsy and found that there was improvement of mothers' reported Practice of daily care activities(feeding, excretion ,playing and sporting activities,sleep) which could be attributed to the frequent explanation, and clarification provided by the study materials

In relation to the total reported practice score of the studied mothers regard care of their CP children, the current study revealed that, nearly one quarter of studied mothers had satisfactory reported practices score before implementation of educational modules . This percentage increased to half after implementation of educational module . This could be due to the mothers was motivated and interested with the educational module and success educational module in giving a clear understanding for mothers about care of their children with CP at home This finding was

similar to Allah et al., [17] who found in his study that there was improvement of studied mothers practice after program implementation

Conclusion:

In the light of the current study findings, it might be concluded that the educational module among studied mothers had a positive effect on improving their reported practice about care of their children with cerebral palsy as there was a statistical significant difference throughout the three phases of the study .

Recommendations:

Based upon the findings of the present study, the following recommendations are suggested:

- Development of training program should be conducted periodically for mothers to update their knowledge and improve their practice.
- Nurses must alleviate stressor of mothers with CP children through providing appropriate knowledge about the disease and community resources .
- Good management strategies for CP like better and accurate diagnoses and more specific therapy to improve patients out come
- Increase the public awareness toward care of child and available specialty center that provide care for these children through mass media such as television, pamphlets, and posters.
- Improving mothers knowledge toward the importance of, perinatal, and post-natal follow up
- Provide mothers of children suffering from CP with updated and Arabic booklets with cerebral palsy

Table (1): Characteristics of Studied Mothers (50 mother)

Characteristic	No (n=50)	%
• **Age (years):**		
▪ 20 –	16	32.0
▪ 30 –	29	58.0
▪ 40-54	5	10.0
Mean ± SD	32.41±8.65	
• **Mother education**		
▪ Illiterate	19	38.0
▪ Read&write	6	12.0
▪ Primary/preparatory	2	4.0
▪ Secondary/diploma	14	28.0
▪ University education	9	18.0
• **Mother occupation:**		
▪ Housewife	33	66.0
▪ Working	17	34.0
• **Family income**		
▪ Sufficient	10	20.0
▪ Insufficient	40	80.0

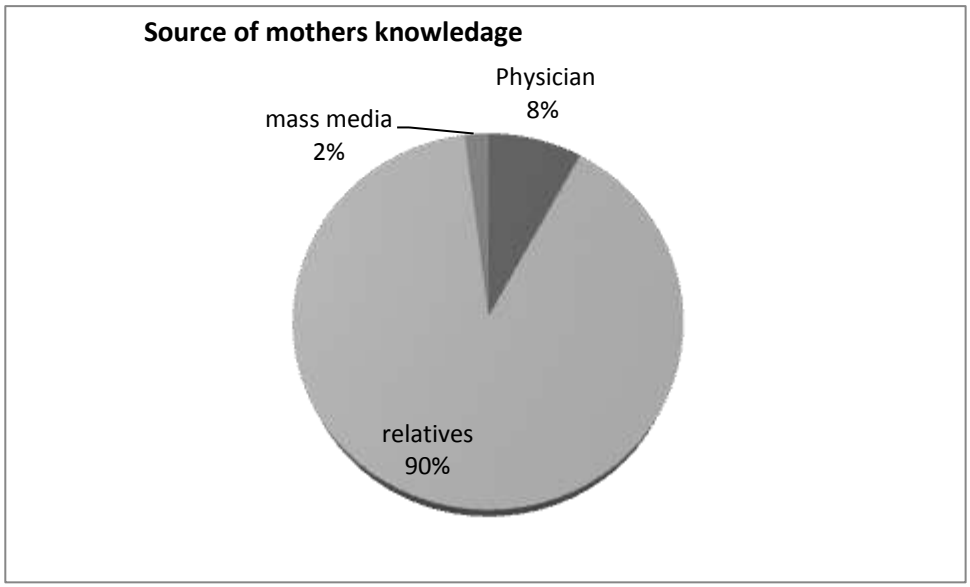

Figure (1) Source of mothers knowledge about cerebral palsy.

Table (2): Characteristics of Studied children (50 child)

Characteristics	NO (N=50)	%
Age (years):		
4-	6	12.0
6-	10	20.0
8-	12	24.0
10-12	22	44.0
Mean ± SD	**7.78±3.3**	
Range	**3-12**	
Gender		
▪ Male	**33**	**66.0**
▪ Female	**17**	**34.0**
Birth order:		
First	**38**	**76.0**
Second	**9**	**18.0**
Third	**1**	**2.0**
4th and more	**2**	**4.0**
Residence		
Rural	**37**	**74.0**
Urban	**13**	**26.0**

Table (3) Impact of the Educational Module on the Studied mothers' Regarding reported Practice of daily care activities throughout the Module Phases:

Items		PRE		POST		FOLLOW		P1 pre VS post	P2 pre VS follow
		N	%	N	%	N	%		
1-Feeding	Independent	0	0.0	9	18.0	9	18.0		
	Partially dependent	8	16.0	20	40.0	16	32.0	0.00**	0.00**
	Dependent	42	84.0	21	42.0	25	50.0		
2-Movement	Independent	8	16.0	9	18.0	8	16.0		
	Partially dependent	17	34.0	16	32.0	17	34.0	0.845	1.0
	Dependent	25	50.0	25	50.0	25	50.0		
3-Walking	Independent	6	12.0	6	12.0	6	12.0		
	Partially dependent	15	30.0	15	30.0	15	30.0	1.0	1.0
	Dependent	29	58.0	29	58.0	29	58.0		
4-Wearing clothes	Independent	2	4.0	7	14.0	3	6.0		
	Partially dependent	7	14.0	13	26.0	11	22.0	0.048	0.51
	Dependent	41	82.0	30	60.0	36	72.0		
5-Bathing	Independent	0	0.0	0	0.0	0	0.0		
	Partially dependent	10	20.0	10	20.0	7	14.0	1.0	0.92
	Dependent	40	80.0	40	80.0	43	86.0		
6-Hair combing	Independent	3	6.0	3	6.0	3	6.0		
	Partially dependent	18	36.0	20	40.0	20	40.0	0.86	0.86
	Dependent	29	58.0	27	54.0	27	54.0		
7-Teeth brushing	No need	3	6.0	3	6.0	3	6.0		
	Partially dependent	4	8.0	5	10.0	5	10.0	0.94	0.94
	Dependent	43	86.0	42	84.0	42	84.0		
8-Excretion	Independent	0	0.0	0	0.0	0	0.0		
	Partially dependent	12	24.0	27	54.0	24	48.0	0.021*	0.035*
	Dependent	38	76.0	23	46.0	26	52.0		
9-Playing and sporting activities	Independent	1	2.0	11	22.0	12	24.0		
	Partially dependent	12	24.0	29	58.0	27	54.0	0.004*	0.005*
	Dependent	37	74.0	10	20.0	11	22.0		
10-Sleep	Independent	5	10.0	10	20.0	8	16.0		
	Partially dependent	25	50.0	29	58.0	30	60.0	0.0041*	0.048*
	Dependent	20	40.0	11	22.0	12	24.0		
11-Communication	Independent	0	0.0	4	8.0	11	22.0		
	Partially dependent	11	22.0	26	52.0	13	26.0	0.038*	0.041*
	Dependent	39	78.0	20	40.0	26	52.0		
	Total	50	100.0	50	100.0	50	100.0		

Statistical significant at p ≤ 0.05*

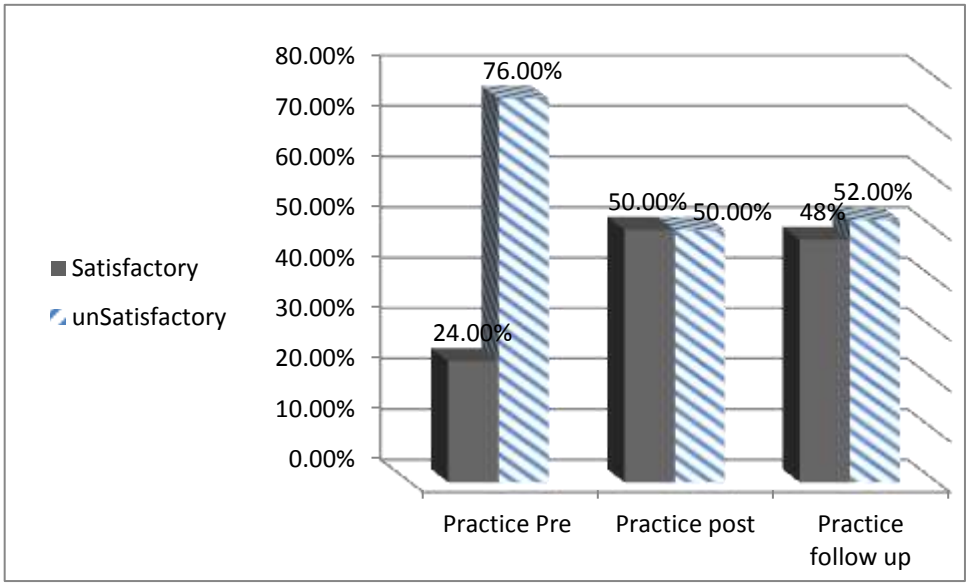

Figure (2): Total mothers reported practice Score throughout the Educational Module Phases

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