Discharge Plan for Parents having Children Suffering from Head Trauma

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Abstract

Background: Effective discharge planning is a vital component to maintain care continuity for head trauma pediatric patient. Despite this, there is a critical gap in the process and quality of discharge planning in Egypt.

Aim of this studywas to assess the effect of discharge plan on parents having children suffering from head trauma.

Design: A quasi- experimental design was used.

Settings: This study was conducted in Emergency Department, Pediatric Intensive Care Unit (PICU) and Neurological Department at children Hospital affiliated to Ain Shams University and El-Menshawy Hospital in Tanta affiliated to Ministry of Health.

Subject: A convenient sample consist of 40 parents accompanied their children suffering from head trauma who attended in the previously mentioned settings.

Tools: 1)- Pre-designed questionnaire sheet which included two parts: part I: concerned with characteristics of studied parents and characteristics of the studied children,Part II: knowledge of the parents regarding caring of their children suffering from head trauma, 2)- Observational check list and 3)- Child Medical Record.

Results: All of studied parents reported that no one gave them any information about head trauma. There was a marked improvement in parents' knowledge and reported practices post implementation of discharge plan. There were strong positive correlations between studied parents' total knowledge and their total reported practices related to care of children after head trauma pre/post discharge plan.There was highly statistical significance difference between parents' total knowledge regarding care of head trauma in children and their level of education post implementation of discharge plan. There was statistical significance difference between parents' total reported practices regarding care of head trauma in children and their level of education post implementation of discharge plan.

Conclusion: All of research hypothesis were accepted and implementation of discharge plan led to significant improvements in parents' knowledge and reported practices regarding care of their children suffering from head trauma.

Recommendations: Discharge plan for all parents having children suffering from head trauma must begin with parents at their first day of admission.

Key words: *Head trauma, Discharge plan, Parents, Pediatric Patient*

Introduction

Traumatic head injury is recognized as a significant public health issue that needs urgent intervention due to its role in high pediatrics' mortality and long-term disabilities, which involve impaired physical, psychological, cognitive, emotional, and social functions, resulting in complete reliance on parents for all everyday activities. [1 & 2]

Management of pediatric patients with mild head trauma targets to concentrate on early detection of intracranial injuries.These intracranial injuries lead to badneurological outcomes if not readily detected. Clinical management of moderate to severe head trauma targets to maintain physiological state of the pediatric patient to prevent secondary brain injury, following this identifyingof intracranial injuries that canprofit from neurosurgical intervention and neuropreservationstrategies.[3]

Pediatric patient return home immediately after being medically stable.This doesn't implythat, the child is recovered completely.Instead, it intelligibly means that, a specialist has concluded that the child's condition is stable and the hospital-level treatment is no longer needed. A discharge plan is a series of actions and activities carried out by hospital clinicians to ensure that patients move smoothly and safely from acute care to subsequent care or home environments. [4]

After the child returns home, parents have to continue engaging in the care scenario as continuity of care and rehabilitation becomes their responsibility since the post-release period is a highly vulnerable period for pediatric head trauma patients. Intensive steps to enhance pediatric patients' and parents' hospital discharge planning are being considered to avoid poor discharge behaviors and treatment discontinuity and reduce the likelihood of poor health outcomes, readmission, and other adverse outcomes. [5, 6]

Aim of the Study

This study aims to assess the effect of discharge plan on parents having children suffering from head trauma. This will be achieved through:

- Assessing knowledge and reported practice of parents related to care of their children suffering from head trauma.
- Designing and implementing discharge plan for parents related to care of their children suffering from head trauma.
- Evaluating the effect of discharge plan for parents related to care of their children suffering from head trauma

Research hypothesis:

The current study hypothesized that there is a positive relation between discharge plan for parents having children suffering from head trauma and knowledge and reported practice related to head trauma.

Research Design:

A quasi- experimental design was utilized in carrying out the study.

Technical design

Technical design includes the research design, setting, subjects, and tools for data collection.

Research Setting:

The study was conducted in emergency department, pediatric intensive care unit (PICU) and neurological department at children Hospital affiliated to Ain Shams University and El-Menshawy Hospital in Tanta affiliated to Ministry of Health.

Research Subjects:

A convenient sample consist of 40 parents accompanied their children suffering from head trauma who attended in the previously mentioned settings, regardless their characteristics.

Tools for data collection:

Data was executed using the following Tools:

I-Pre- Designed Questionnaire Sheet (Before and After):

This sheet was developed by researcher after reviewing the related literatures in a simple Arabic language to suit all parent's knowledge related to their awareness about care of their children suffering from head trauma. It was consiststed of two parts:

Part 1: It was concerned with characteristics of studied subjects:

-Characteristics of studied parents include name, age, gender, educational level, and occupation.

-Characteristics of the studied children include name, age, gender, ranking, date of the trauma, causes of the trauma, and imaging studies include CT.

Part 2: It was concerned withknowledge of the parents regarding caring of their children suffering from head trauma which include definition, causes, types, signs and symptoms, diagnosis, management, preventive and safety measures.

II- Observational Check List:

It was used to assess parents reported practice regarding care of their children suffering from head trauma which include:

Care of child with posttraumatic seizure,consisted of 7 items according to checklist adapted from **Hockenberry & Wilson, [7].**

Administer of oral medication, consisted of 23 items according to checklist adapted from **Leifer, [8].**

Administer of ear drops, consisted of 10 items according to checklist adapted from **Leifer,[9].**

Administer of topical medication (Ointments and creams), consisted of 8 items according to checklist adapted from **Pope, [10].**

Administer of nose drops, consisted of 7 items and nasal sprays consisted of 7 items according to checklist adapted from **Perry et al., [11].**

Applying eye ointments and eye drops,consisted of 12 itemsaccording to checklist adapted from **Mason& Stevens,[12].**

Measuring axillary temperature,consisted of 11 itemsaccording to checklist adapted from **McKinney et al.,[13].**

Apply tape water compression,consisted of 15 itemsaccording to checklist adapted from **McKinney et al.,[14].**

Perform scalp wound care at home, consisted of 17 items according to checklist adapted from **Schmitt,[15].**

Perform cast care at home,consisted of 20 itemsaccording to checklist adapted from **James et al., [16].**

Maintain skin integrity at home,consisted of 17 itemsaccording to checklist adapted from **The Royal Children's Hospital Melbourne,[17].**

Perform eye care at home,consisted of 8 items according to checklist adapted from **Macqueen et al., [18].**

Perform oral care,consisted of 17 items according to checklist adapted from **Beatty, [19].**

Preventing of fallingfor child from (0 to 2 years), consisted of 20 items according to checklist adapted from **McWilliams, [20].**

III- Child Medical Record.

Medical record used to assess child history, diagnosis, growth and development, investigations, consultation, treatment, and prognosis.

Operational design:

Field Work

The actual field work was implemented over a period of 6 months from the first of September 2019 up to the end of February 2020. The researcher was attending in the agreed study setting during morning shift 4 days/ week (Saturday to Tuesday) from 8.00 am. To 2.00 pm. and actual field work was divided into four phases:

1-Assessment phase

2-Planning phase

3-Implementing phase

4-Evaluating phase

Validityand Reliability:

Assessment and certainty of the tools of the study were performed by pool of five expertsin pediatric nursing to enable validating of format, layout, consistency, accuracy and relevance of the tools.The reliability was conducted for the developed tools. Cronbach's Alpha for questionnaire was 0.921 and for reported practices was 0.968.

Exploratory phase:

A pilot study was proceed on 10% of the parents of the study sample (four parents) to test the validity and feasibility of the tools, time consumed to fill in the tools. The parents involved in the pilot study were banned from the study sample.

Administrative design:

An official sanctioned permission to carry out the study was obtained through an issued letter from Dean of faculty of nursing, Ain Shams University to hospital directors of the previously mentioned settings.

Statistical Design:

The obtained data was organized, tabulated, categorized and statistically analyzed by using statistical package for social sciences (SPSS). The significance of the results was considered as follows: When $P > 0.05$ there is no statistical significance difference and $P \leq 0.001$ there is a statistical significance difference.

Ethical considerations:

The ethical considerations in the study included the following:

All the gathered data was used for research purpose only. The study sample was edified about the purpose and intended resultsof the study and they was assured that the study is freeof hazards, they uncoerced for participation and they have the right to withdraw from the study at any time and without given any reason. They were assertive also that anonymity and confidentiality were guaranteed.Informed consent was obtained from parents preceding data collection.

Results

This study was designed to assess the effect of discharge plan on parents having children suffering from head trauma.

Table(1): Distribution of the Studied Parents according to theirCharacteristics (No=40).

Items	No	%
Age / years		
20 < 30	10	25
30 < 40	19	47.5
40 ≤ 50	11	27.5
$\overline{x}$	35.3 ± 7.3	
Gender		
Male (father)	8	20
Female (mother)	32	80
Level of education		
Illiterate	1	2.5
Read and write	2	5
Secondary education	21	52.5
High education	16	40
Job		
Not working	26	65
Free job	10	25
Governmental job	4	10

Table(1)showed that less than half (47.5%) of the studied parents aged from 30| < 40 years with mean age 35.3 ± 7.3 years and most (80%) of them were females. Moreover, this table revealed that,more than half (52.5%) of the studied parents held secondary education and 65% of them were not working.

Table(2): Distribution of the Studied Children according to theirCharacteristics (No=40).

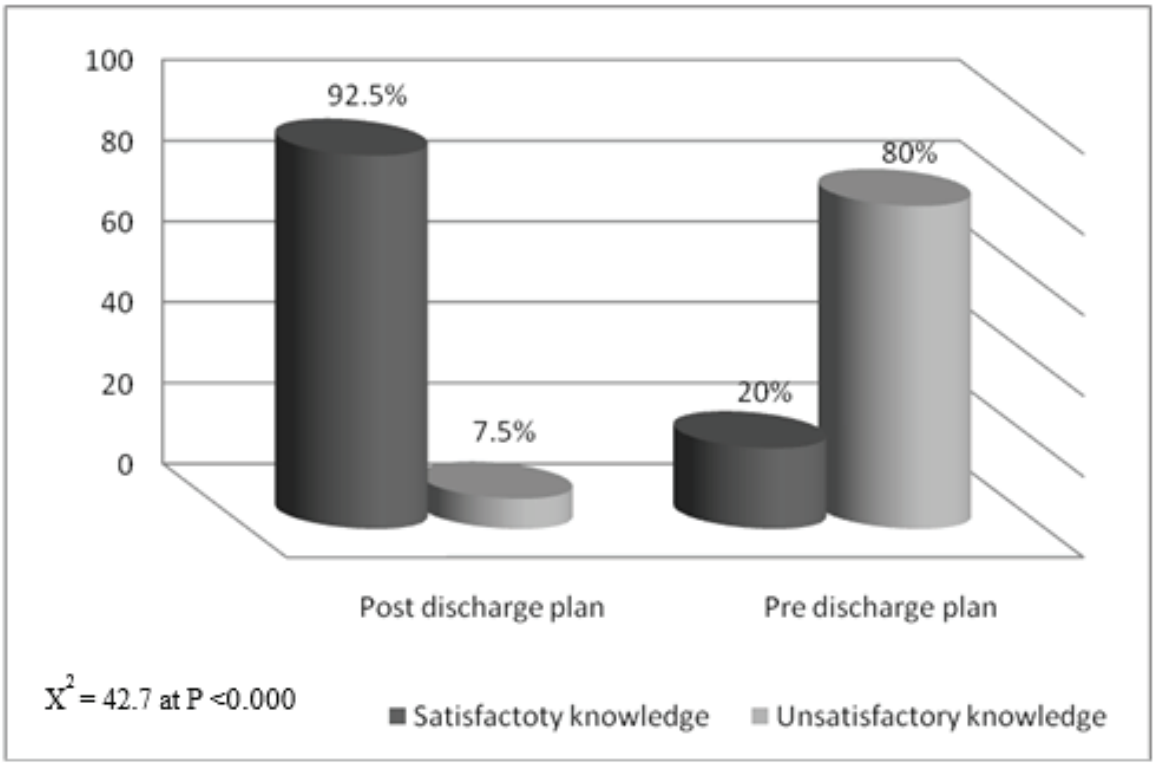
Items	No	%
Age / years		
< 5|	9	22.5
5| < 10	17	42.5
10 < 15	11	27.5
15 < 20	3	7.5
$\bar{x}$ ± SD	8.5 ± 4.4	
Gender		
Male	28	70
Female	12	30
Ranking		
First	20	50
Second	10	25
Third & more	10	25

Table (2)revealed that more than two fifth (42.5%) of the studied children aged from 5| < 10 years with mean age 8.5 ± 4.4 years and more than two thirds (70%) of them were males. Also, it was clear from this table that, half (50%) of the studied children were ranked as the first child in their families.

Table(3): Distribution of the Studied Parents according to their Sources of Knowledge about Head Trauma (No=40).

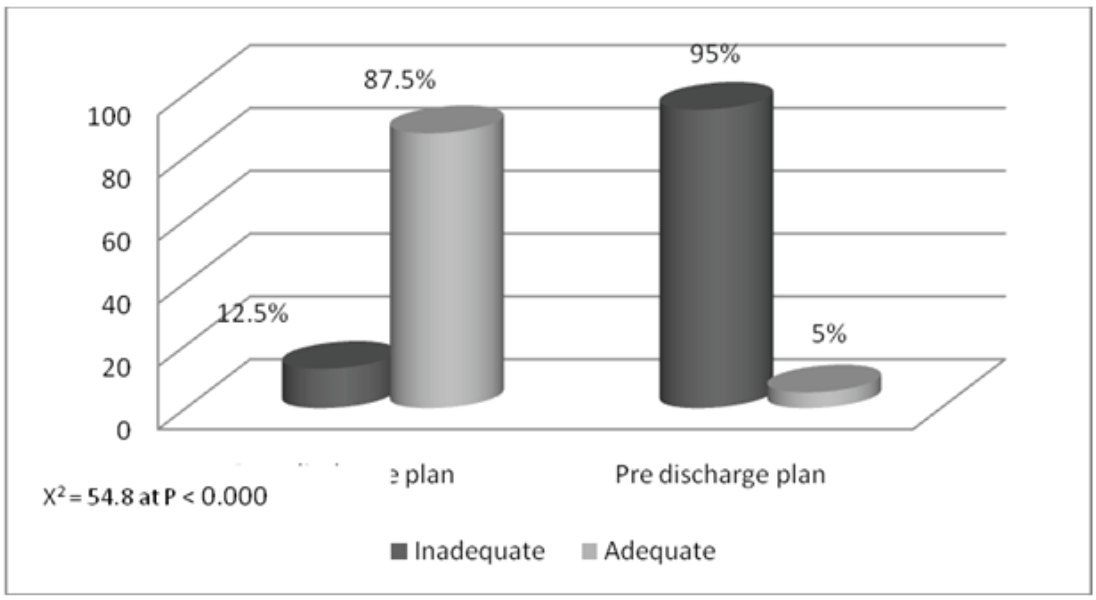
Sources of knowledge	No	%
No one give me any information in hospital.	40	100

Table (3) showed that all (100%) of the studied parents reported that no one gives them any information in hospital about head trauma in hospital.



Figure(1): Distribution of the Studied Parents according to their total Knowledge about head trauma in children pre/post discharge plan.

Figure (1)illustrated that, there was a marked improvement in parents' knowledge post implementation of discharge plan with highly statistically significant difference (x^2= 42.7 and P value = 0.000), where the majority (92.5 %) of the studied parents had satisfactory total knowledge regarding to care of children after head trauma post implementation of discharge plan compared to only (20%) pre implementation.



Figure(2): Distribution of the Studied Parents according to their total reported practices related to care of children after head trauma pre/post discharge plan.

Figure (2)illustrated that, there was a marked improvement in parents' reported practices post implementation of discharge plan with highly statistically significant difference (x^2= 54.8 and P value = 0.000), where the majority (87.5 %) of the studied parents had adequate total reported practices regarding to care of children after head trauma post implementation of discharge plan compared to only 5% of them pre implementation.

Table (4): Correlation between the Studied Parents' total knowledge and their total Reported Practices related to Care of Children after Head Trauma Pre/Post Discharge Plan (No=40).

Total parents' reported practices	Total parents' knowledge			
	Pre discharge plan		Post discharge plan	
	R	p	R	P
Pre discharge plan	0.772	0.000**	-	-
Post discharge plan	-	-	0.787	0.000**

Table (4) illustrated that, there were strong positive correlations between studied parents' total knowledge and their total reported practices related to care of children after head trauma pre/post discharge plan.

Table (5): Relation between the Studied Parents' Characteristics and their total Knowledge regarding Care of Head Trauma in Children Post Discharge Plan (No=40).

Parents' characteristics	Parents' total knowledge				x^2	P value
	Unsatisfactory		Satisfactory			
	No	%	No	%		
Age / years						
20 < 30	2	20	8	80	3.83	0.147
30 < 40	0	0	19	100		
40 ≤ 50	1	9.1	10	90.9		
Gender					Fisher Exact Test	0.502
Male (father)	3	9.4	29	90.6		
Female (mother)	0	0	8	100		
Level of education						
Illiterate	1	100	0	0	40	0.000**
Read and write	2	100	0	0		
Secondary education	0	0	21	100		
High education	0	0	16	100		
Job						
Not working	2	7.7	24	92.3	0.416	0.812
Free job	1	10	9	90		
Governmental job	0	0	4	100		

** Highly statistical significant difference

This table illustrated that, there was highly statistical significance difference between parents' total knowledge regarding care of head trauma in childrenand their level of education post implementation of discharge plan (x^2 = 40 and P value = 0.000). While, there was no statistical significance difference between parents' total knowledge regarding care of head trauma in childrenand their age, gender and job post implementation of discharge plan (P value = 0.147, 0.502 & 0.812 respectively).

Table (6): Relation between the studied parents' characteristics and their total reported practices regarding care of children with head trauma post discharge plan (No=40).

Parents' characteristics	Parents' total reported practices				x^2	P value
	Inadequate		Adequate			
	No	%	No	%		
Age / years						
20 < 30	2	20	8	80	1.75	0.417
30< 40	1	5.3	18	94.7		
40 ≤ 50	2	18.2	9	81.8		
Gender					Fisher Exact Test	0.563
Male (father)	5	15.6	27	84.4		
Female(mother)	0	0	8	100		
Level of education						
Illiterate	1	100	0	0	23.46	0.000**
Read and write	2	100	0	0		
Secondary education	2	9.5	19	90.5		
High education	0	0	16	100		
Job						
Not working	4	15.4	22	84.6	0.826	0.662
Free job	1	10	9	90		
Governmental job	0	0	4	100		

** Highly statistical significant difference

This table illustrated that, there was statistical significance difference between parents' total reported practices regarding care of head trauma in children and their level of education post implementation of discharge plan(x^2= 23.46 and P value = 0.000). While there was no statistical significance difference between parents' total reported practices regarding care of head trauma in children and their age, gender and job post implementation of discharge plan (P value = 0.417, 0.563 & 0.662 respectively).

Discussion

Head trauma is a critical public health problem whichhas a relatively high rate of emergency department

visits worldwide.It is one of the most frequent causes of pediatric death and acquired disabilities. Long-term disabilities can transpire across many areas of child functioning including: cognitive abilities, psychomotor skills, language, executive functioning, emotional and behavioral functioning, social competences, academic and occupational performance and quality-of-life, resulting to a high burden for pediatric patients and their families**, [21].**

The findings of the current study revealed that, more than two fifths of the studied parents aged from 30| < 40 years. This finding was in agreement with the study of**Halawa et al.,**[22]who study entitled "Epidemiology of Non-Fatal Injuries Among Egyptian Children: A Community-Based Cross-Sectional Survey" found that, about one third of the studied mothers were in the age group 30 <40 years.

As regards characteristics of parents under study, results revealed that, more than three quarters of studied parents were females. This finding was consistent with **O'Brien et al.,**[23]who conducted a study entitled "A Comparison of Student and Parent Knowledge and Perceived Confidence about Brain Injury and Concussion" and reported that, females parents proportion were more than two thirds, while males parents proportion were more than one third.

Concerning to parents' level of education, the finding of the present study showed that, more than half of the studied parents held secondary education. This finding was not in accordance with **Black et al.,**[24]who carried out a study entitled "Parental Report of Significant Head Injuries in Children Aged 3–17 Years: United States, 2016" reported that, the percentage of children suffered from head injury whose parents had high school education were higher compared with those whose parents had secondary education or less. These results might be due to the differences in the study settings.

This study showed that, more than two thirds of studied parents were not working. This finding was incongruent with **Foster et al.,**[25]who performed a study entitled "Parent Perspectives and Psychosocial Needs 2 years Following Child Critical Injury: A qualitative Inquiry", observed that, proportion of paid employment was the majority of the studied sample.

Regarding the characteristics of the studied children, the present study clarified that, the most affected age group was 5| < 10 years. This finding was contrasting with **Amram et al.,**[26]who found in a study entitled "Socio Economic Status and Traumatic Brain Injury amongst Pediatric Populations: A Spatial Analysis in Greater Vancouver", that, the majority of injuries occurred in children between 15 and 18 years of age.

The findings of the present study revealed that male children were more affected than female children. This was parallel to study done by **Egbohou et al.,**[27]who carried out a study entitled "Epidemiology of Pediatric Traumatic Brain Injury at Sylvanus Olympio University Hospital of Lomé in Togo" described that, males have a higher risk of head injury than females. This result might be due to males and females are different in growing environment, neurodevelopment, and sociological attributes.

Considering parents' source of knowledge about head trauma, all of studied parents' reported that, no one give them any information about head trauma in hospital. From the researcher point of view, this could be due to low awareness of health care providers on importance of discharge plan in addition to, some job obstacles include but not limited to, lack of staff, and poor communication among different healthcare professionals. This finding was supported by that of **Sarsfield et al., [28]**who performed a study entitled "Evaluation of Emergency Medicine Discharge Instructions in Pediatric Head Injury" reported that, children sustaining head injury were inadequately instructed to restrict athletic activities upon discharge. In the same context, **Camp et al., [29]**who carried a study entitled "Emergency department visits for children with acute asthma: discharge instructions, parental plans, and follow-through of care--a prospective study" mentioned that, parentsnot obtained any specified asthma strategies to demote the repercussion of upper respiratory tract infections. Also

Kirk et al.,[30]studied "Supporting Parents following Childhood Traumatic Brain Injury: A Qualitative Study to Examine Information and Emotional Support Needs across Key Care Transitions." clarified that, parents had disappointed information and emotional support needs across the care pathway from the time of the accident up to their child's return to home. They lacked information related to the consequences of the traumatic brain injury on their child, existing and futuretreatment/rehabilitation plans, helping their child and managing their behavior, and accessing services/support.

According to the studied parents' total knowledge and total reported practices, the current study clarified that, there were an improvement post discharge plan compared to its implementation. These findings were corresponding to those of **Mohamed et al.,**[31]who conducted a study entitled "Effect of Discharge Plan for Children Undergoing Chemotherapy and their Caregivers on Improving Practice and Coping Pattern" affirmed that, caregivers who take receipt of discharge plan instructions showed improving in knowledge and practice with regard to care of their children. In the same context **Rashad et al.,**[32]very recently carried out a study entitled "Effectiveness of Maternal Training Program on Improvement of Care Provided to Their Children with Cerebral Palsy at Zagazig University Hospitals" reported that, slightly less than on quarter of the studied mothers had satisfactory reported practice score before implementation of the educational module compared to half of them after implementation of educational module. On the other hand, these findings were not in accordance with **Thomas et al.,**[33]who carried out an observational study entitled "Parental Knowledge and Recall of Concussion Discharge Instructions" reported that, nearly fifth of parents who received verbal instructions were muddled about when to return to the emergency department after evaluation for head injury, moreover one quarter of parents misrememberprecise discharge advice related to concussion.

As regards the correlation between the studied parents' total knowledge of and their total reported practices regarding care of their children suffering from head trauma, the result of the current studied clarified that, there were a strong positive correlations between studied parents' total knowledge and their total reported practices post implementation of discharge plan. This result indicated that the improvement in parents' knowledge about head trauma led to improve parents' reported practices. Previously, **Hassan et al.,**[34]carried out a study entitled "Discharge Plan for Mothers to Cope with their Children Suffering from Bronchial Asthma" mentioned that, there were a strong positive correlations between total knowledge of the studied parents and their total reported practices post implementation of discharge plan. Additionally, **Mahmoud & Sabea,**[35]recently conducted a study entitled "Dietary Counseling Program for Mothers of Children with Cerebral Palsy" mentioned that, mothers' knowledge and reported practices toward their children with cerebral palsy improved significantly post implementation of the dietary educational program.

As regards the correlation between the characteristics of the studied parents and their total knowledge and total reported practices regarding care of head trauma in children, the result of the current studied indicated that, there were a positive correlations between parents' level of education and their total knowledge and total reported practices post implementation of the discharge plan. Meanwhile, there were no correlations between parents' age and job. These findings were close resemblance to those of **Megahedet al.,**[36]who carried out a study entitled "Knowledge, Attitude and Practice of Rural Mothers towards Home Injuries among Children Under 5 years of age in Menouf District- Menoufia Governorate, Egypt" reported that, there was a statistically significantly higher percent of satisfactory knowledge amidst mothers who held high education. There was a significant positive correlation between mothers' practice and either their education.

Conclusion

All of research hypothesis were accepted and the implementation of the discharge plan led to significant improvements in parents' knowledge and reported practices regarding care of their children suffering from

head trauma.

Recommendations:

· Discharge plan for parents having children suffering from head trauma must begin with parents at their first day of admission.

· Reinforce effective discharge plan through planning, educational programs for health care providers, performance review, and standardized and policy-driven protocol.

· Periodical educational training program for all parents in safety measures should be conducted to decrease incidence of head trauma among pediatric population.

Conflict of Interest : The authors declare that they have no conflict of interest.

Funding: This work is self-funding. The authors did not take any funds from any organization or person.

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