Management of Dehydration in Children: Effect of Nursing Protocol

Thesis

Submitted for Partial Fulfillment of the Requirements of the Doctorate Degree in **Pediatric Nursing**

Presented by

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2016

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Acknowledgments

First, I feel always indebted to **Allah,** *for Blessing this work until it has reached its end, as a part of his generous help throughout our life.*

My profound thanks and deep appreciation to **Prof. Dr. Wafaa El-Sayed Ouda,** *Professor of Pediatric Nursing for her great support and advice, she gave me the confidence and encouragement to fulfill this work.*

I am deeply grateful to **Dr. Hyam Refaat Tantawi,** *Assistant Professor of Pediatric Nursing, Faculty of Nursing, Ain Shams University, for her supervision, guidance and support throughout this work.*

Finally, I would like to express my deep appreciation and gratitude to ***Nurses, children and their caregivers,*** *who participated as the study subjects for their cooperation.*

The candidate

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List of Contents

List of Abbreviations

Abbr.	Full-term
APP	: American Academy of Pediatrics
BGL	: Blood Glucose Level
BRAT	: Bananas, Rice, Applesauce and Toast
BUN	: Blood Urea Nitrogen
CDC	: Centers for Disease Control and Prevention
CNS	: Central Nervous System
CRT	: Capillary Refill Time
ECF	: Extracellular Fluid
ED	: Emergency Department
g/d	: Gram per Deciliter
HBF	: Home Based Fluids
ICF	: Intracellular Fluid
IV	: Intravenous Therapy
Kg	: Kilogram
MOH	: Ministry of Health
ML	: Milliliter
NGT	: Nasogastric Tube
ORS	: Oral Rehydration Solution
ORT	: Oral Rehydration Therapy
SMC	: Safe Motherhood Committees
TBW	: Total Body Weight
UEC	: Urea, Electrolyes and Creatinine
UNICEF	: United Nation's International Children Emergency Fund
WHO	: World Health Organization

List of Tables

List of Tables

List of Figures

ABSTRACT

Introduction: Nursing protocols in management of dehydration in children has improved the quality and consistency of care for the children with dehydration. **Aim of the Study:** The present study aimed to investigate the effect of nursing protocol in management of dehydration in children. **Study Design**: A quasi- experimental design was utilized. **Setting:** The study was carried out at Pediatric Emergency and Medical Departments/Pediatric Children's Hospital, affiliated to Ain Shams University Hospitals. **Subjects:** The study included 30 nurses caring for children suffering from dehydration. Also, the study sample involved 30 children diagnosed with dehydration and their parents in the previously mentioned settings. **Tools of the Study:** The involved children and their parents' assessment sheet, nurses' questionnaire sheet for knowledge assessment pre- and post-implementation of nursing protocol, observational checklists and nursing protocol in management of dehydration in children. **Results:** It was clear that the majority of the studied nurses had satisfactory knowledge and competent practices regarding management of dehydration in children-post implementation of nursing protocol. There was a statistically significant difference between total nurses' knowledge and practice. **Conclusion:** Implementation of nursing protocol had a positive effect on the improvement of nurses' knowledge and practice regarding care of children suffering from dehydration. **Recommendations:** Raising awareness of nurses regarding nursing protocol in management of dehydration in children.

Key words: Dehydration, Children, Nursing protocol

Introduction

Dehydration is a common illness complication often observed in pediatric patients presenting to the emergency department (ED). Early recognition and intervention are important to reduce the risk of progression to hypovolemic shock and end-organ failure ***(Keeley et al., 2015).***

Dehydration from gastroenteritis remains a leading cause of death in developing countries. In the United States, annually there are about 220,000 hospitalizations for children less than five years of age due to gastroenteritis and dehydration ***(Chen et al., 2011).***

Dehydration involves the excess loss of water and other body fluids, decreased intake, increased output (renal, gastrointestinal or insensible losses), a shift of fluids (e.g. ascites, effusions) and capillary leakage of fluids (e.g. burns and sepsis) ***(American Academy of Pediatrics, 2015).***

Rehydration with oral rehydration solution (ORS) is highly supported by ***the World Health Organization (WHO), the Centers for Disease Control and Prevention (CDC), the American Academy of Pediatrics (AAP) and the European Society of Pediatric Gastroenterology and Nutrition (ESPGAN), (2011)*** for children with mild to moderate

dehydration, while reserving intravenous (IV) fluids is advisable for children with severe dehydration.

Nursing protocols in management of dehydration in children are considered one of the most promising and effective advances for defining and improving the quality of care. However, their development, dissemination and implementation in practice are rarely straight forward. The use of protocols also known as standing orders, preprinted order sets, advanced nursing interventions and computerized order sets, has been recognized as a method of enhancing safety, while expediting pediatric patient care ***(Retezar et al., 2011).***

Also, the nursing protocols in management of dehydrated children involve institution-based guidelines, developed for dehydration in children or chief complaints that allow the nurse to initiate diagnostic tests and interventions regarding children suffering from dehydration evaluated by the health care provider. Early implementation of nursing protocols for dehydration has been reported to decrease pediatric patient's length of stay in the ED ***(Stauber, 2013).***

The integrated management of childhood illness (IMCI) using nursing protocol for the management of dehydration in

children includes three plans: plan (A) for children with mild dehydration or those who have been successfully rehydrated, plan (B) is for children with moderate dehydration, and plan (C) is for severe dehydration ***(Yu et al., 2011).***

Emergency nurses in pediatric care settings should be trained on using nursing protocol, which contains details of practical procedures for management of different degrees of dehydration including administration of oral rehydration therapy (ORT) and IV fluid therapy. Nurses involved in pediatric care settings should be able to demonstrate continuing professional development in the specialty by attendance of local and national meetings in addition to suitable training courses ***(Bonilla-Felix et al., 2011).*** Hospitals must be able to demonstrate the necessary professional and technical infrastructure together with protocols to access specialized services provided elsewhere. Consequently, each pediatric care setting should be fully complied with clinical guidelines, quality assurance, follow up of high-risk survivors, monitoring services' provision and access for training and continuing education ***(Harmon et al., 2013).***