Summary

Hydrocephalus is the most common congenital abnormality of the central nervous system in children. It is characterized by excessive accomulation of cerebrospinal fluid in the ventricles of the brain. Shunt infection constitute one of the main risks of shunt surgery for hydrocephalus, which is single most common type of surgery performed by pediatric neurosurgeons. Infections complications are responsible for increased morbidity and mortality. Most modern series report infection rates approaching 10% of all shunt procedures. Nursing management of the child with hydrocephalus will focus on maintaining cerebral perfusion, minimizing neurologic complications, maintaining adequate nutrition, promoting growth and development, and supporting and educating the child and his family.

The aims of the study are:

1. To evaluate the effect of nursing care protocol in prevention and management of hydrocephalic patient developing infection.
2. To assess nurses' knowledge and practices regarding pre and post operative management of children with shunted hydrocephalus.
3. To assess the frequency of the occurrence of shunt infection.

Hypothesis

Protocol of immediate pre and post operative nursing interventions of children with shunted hydrocephalus will reduce the occurrence of shunt infection.

Research design

A quasi experimental research design was used .

Settings

The study was conducted at the Neurosurgery Department in Benha University Hospital and Surgery department in Specialized Pediatric Hospital.

Sample

The sample included 15 nurses working in Benha University Hospital and 10 nurses working in Specialized Pediatric Hospital. It also included 40 children who met the study criteria.

Tools of the study

Three tools were utilized for data collection

1- Tool one

Data collection interview questionnaire sheet that was developed by the researcher to assess nurses' knowledge about hydrocephalus.

2- Tool two

Nurse's observation checklist. It contained ten parts. They included:

Part I: Pre and postoperative care observational checklist.

Part II: Hand washing and gloving observational cheklist.

Part III: Monitoring axillary temperature observational checklist.

Part IV: Cannula insertion and IV drug administration observational checklist.

Part V: Wound care observational checklist.

Part VI: Management of fever observational checklist.

Part VII: Glassgow coma response assessment scale observational checklist.

Part VIII: Measuring head circumference observational checklist.

Part VIIII: Pre and postoperative infection control precautions observational checklist. It included two subparts.

Part VIIIII: Follow up plan of care observational checklist.

3- Tool three

Patient's profile sheet.

The main results of the study showed that:

1. More than two thirds (72%) of nurses had ten or more years of experience.
2. All nurses (100%) had secondary nursing school.
3. More than one third (47.5%) of children under one year of age and were males.
4. Only 12.5% of children had shunt infection on post operative period within 6 months post program.
5. Nurses had better knowledge about hydrocephalus on posttest than on pretest.
6. Nurses had better knowledge about complications of hydrocephalus on posttest than on pretest.
7. Nurses had better total knowledge about nursing management of hydrocephalus on posttest than on pretest.
8. Nurses had better knowledge and practices about prevention of surgical site infection, disinfection of instruments, personnel infection control hygiene and environmental infection control.
9. More than three quarters (76%) of nurses had completely done pre operative nursing care activities and post operative care activities (80%) on posttest than on pretest.
10. Nurses had better hand washing practices on posttest than on pretest.
11. Nurses had better gloving practices on posttest than on pretest.

12. The majority of nurses had completely performed pre operative preparation of patients on posttest than on pretest.
13. Approximately all nurses had completely performed post operative care in post operative period on posttest than on pretest.
14. Approximately three quarters (76%) of nurses had adequate knowledge about shunt infection and more than two thirds (72%) of nurses completely followed infection control rules in their practice on posttest than on pretest.

The study concluded that:

Protocol of immediate pre and post operative nursing interventions of children with shunted hydrocephalus reduced the occurrence of shunt infection.

Nurses had better knowledge and practices about the pre and post operative management of children with shunted hydrocephalus on posttest rather than on pretest.

Based on the results of the study it was recommended that:

1. Infection control hospital protocols must be instituted for each hospital and closely supervised.
2. Educational programs about infection control should be provided to nurses to reduce shunt infection.
3. Written booklets, posters and videos should be available in each unit in hospital to acknowledge nurses about infection control procedures.
4. The neurosurgery department should be adequately staffed and well equipped with supplies through the three shifts.
5. Infection control programs should be basic components of nursing educational programs especially those related to pre and post operative care of hydrocephalic children.

6. There should be a library, computers and internet available in neurosurgery department to help nurses in upgrading their infection control competencies.
7. Future researches should be applied utilizing different methods of education as well as attitude enhancement techniques to help nurses to follow infection control principles.