

**Original Article****Assessment of the Nurses Performance in Providing Care to Patients Undergoing Nasogastric Tube in Suez Canal University Hospital****Magda Abdelaziz Mohammed, Dr**

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Nasogastric tube feeding is the introduction of liquid, via a tube inserted through the nose and running directly to the stomach. In general, tube feeding is a technique used for those who are unable to eat on their own. The aim of the present study is to assess nurses' performance in providing care to patients undergoing nasogastric tube. The study was a descriptive research design was used to conduct this study; a total number of 50 nurse were selected randomly using systematic sampling technique. Data were collected over a period of four months, using two tools: Tool (1) Questionnaire sheets to assess nurses knowledge about care provided to patients undergoing nasogastric tube. Tool (2): Observational checklist to assess the nurses practice in providing care to patients undergoing nasogastric tube. The results of the present study revealed that unsatisfactory level of performance in providing care to patients undergoing nasogastric tube among nurses in the sample. Age and experience was correlated with levels of nurse's knowledge. However, there were statistical significant differences between practice and gender, marital status and graduation. The study recommended that they had satisfactory theoretical knowledge and clinical applications nasogastric tube care and feeding parts should be taught together, to facilitate learning continuous evaluation of nurse's knowledge and performance is essential to identify nurse's needs.

**Key Words:** Nasogastric tube, Tube Feeding, Nurses, Nursing Care.**Introduction**

Nasogastric tube feeding is indicated when short term nutritional support is required. As the nasogastric route interference minimally with oral function, it can be used to supplement oral intake. The tube used should be narrow in diameter and flexible. Tubes that have a wide diameter are poorly tolerated as they are un comfortable, can cause pressure necrosis in the nose and oropharynx and may encourage sphincter incompetence, thus increasing gastric reflux and aspiration (Alexander et al., 2007).

Indication of nasogastric tube is diagnostic and therapeutic. Diagnostic include: - (Evaluation of upper gastrointestinal bleed (presence, volume), Aspiration of gastric fluid content, identification of the esophagus and stomach on a chest radiograph& Administration of radiographic contrast to the GI tract). But Therapeutic include: - (Gastric decompression, Relief of symptoms and bowel rest in the setting of small-bowel obstruction.), Aspiration of gastric content from recent ingestion of toxic material, Administration of medication, Feeding and Bowel irrigation. But contraindication is: - (sever midface, trauma, esophageal varices,

coagulation abnormality, recent nasal surgery, and alkaline ingestion (Shlmovitz and Shah, 2008).

The nurse may have to perform nasogastric tube for many cases such as (oral cancer, stroke and other gastrointestinal disease). Gastric intubation's is done to provide nutrition, medication, or both to perform gastric decompression. Example of different type of gastric intubations include: - nasogastric tube (pass through the nose into stomach via esophagus), orogastric tube (pass through the mouth into stomach) & nasoenteric intubation (tube pass through the nose esophagus and stomach to the small intestine). The nasal route is the preferred route for passing a tube when the client nose is intact and free from injury (Timby and Smith, 2005).

Caring for client with feeding tube generally involves maintaining tube patency, clearing any obstruction, providing adequate hydration, dealing with common formula related problem and preparing client for home care (Timby, 2009).

The complications of nasogastric intubation may include: aspiration of the stomach contents leading to asphyxia, abscess formation or aspiration pneumonia; trauma injury including perforation of the nasal, pharyngeal, esophageal or gastric tissue, pulmonary hemorrhage, emphysema, pneumo thorax, pleural effusion or pneumonitis from a malpositioned tube, nosebleeds, secondary infection in the sinus, throat, esophagus or stomach, development of a tracheal-esophageal fistula, erosion and/or necrosis of nasal, pharyngeal, esophageal or gastric tissue, The complications of nasogastric tube feedings may include:-( tube migration out of correct position, regurgitation and aspiration of the feeding, ,abdominal distention, cramping and discomfort from too much feeding or a rate of feeding that is too rapid (Martelli, 2009).

The problems occur during feeding with nasogastric tube include: diarrhea which caused by pollution of feeding, rapid feeding and anxiety of patient- nausea & vomiting which caused by high concentration of feeding and inaccurate insertion of the tube - constipation which caused by slowly intestinal movement and prolonged immobility-dehydration which caused by recurrent diarrhea or frequent of urination which caused by anti diuretics medications – tube obstruction which caused by

leakage of feeding or narrowing of the tube (Elmasry, 2011).

### Significance of the study

It has been found from the researcher's experience as clinical instructor in Suez Canal university hospital that most of hospitalized patients with nasogastric tube have many complications from insertion or feeding problems varying according to their diagnosis. Also its hoped that data generated from this study could help in planning and managing care in ICU, medical ward, surgical, burn units as well as training adequately personal responsible for such care. Nasogastric tube care one of the most important nursing procedure and the nurse had a pivotal role and should highly qualified in performing this procedure son that the investigator of the study will assess nurses performance during this procedure.

### Aim

The study was carried out to assess nurses' performance in providing care to patients with nasogastric tube through:-(Nurse's knowledge and practice).

### Research Question

To achieve the above purpose of this study the following question should be answered:

A-Did nurses have satisfactory knowledge about the care of patients undergoing nasogastric tube?

B-Did nurses have satisfactory practice in providing care to patients undergoing nasogastric tube?

### Operational definition:

For the purpose of this study nurse managers means head nurses working in the studied hospital as there's only one nursing director and no supervisors.

### Subject And Methods

The design for this study was (a descriptive design), carried out at Suez canal University Hospital in Ismailia Governorate, in inpatient units in the hospital; medical ,surgical (male and female), burn unit and ICU units. The subjects of this study were included all nurses working at previous mentioned settings. Available (50) nurse.

Data of this study was collected through using two tools.

Tool I: questionnaire sheet consists of two parts, Part I: includes items related to demographic characteristics of the nurses. Part II: Knowledge sheet consisted of twenty seven statements to measure nurse's knowledge about care provided to patients with nasogastric tube.

Tool II: Observational checklist : It was adapted from Ahmed (1997) after necessary modifications were done. It aims at assessing nurse's practice about care provided to patients with nasogastric tube.

### Scoring System

Regarding the scoring system for practicing of the studied nurses , a check list was assigned to score according to its number of sub item. The answer was represented as it is reported in the answer sheet (done, not done, comments). (1) score if done and (zero) score if not done. the scoring system of the tool checklist was computed and the sheet received a grade out of 92 point. The score of practice test expressed as percent from a maximum of 92 points as follow:-

-Satisfactory : Started from 50% and above.

-Unsatisfactory : Below 50%.

Regarding the scoring system for nurse's knowledge, all knowledge variables were weighted according to the item included in the answer of each question. Each question was corrected from 100 degrees. All questions was measured and divided by the number of questions to obtain the mean knowledge of each nurse. Knowledge below 50% was considered unsatisfactory while those equal to or above 50% was considered satisfactory.

### Results

Table (1) illustrated the characteristic of the nurse in the study sample , the table reveals that It was found that the highest percentages of the nurse's age were above 26 years, with a percentage of (48.0%). Most of sample (62.0 %) had 4 years or more of experience and the highest percentages of them were married (52.0%) and (64.0 %) were graduated from the secondary school of education. Regarding to management and training courses, it was found that no one attending training programs.

Table (2) indicates the most common complications with nasogastric tube fed patients feeding. nurse's reported that abdominal

distension was the most common (58.0%) followed by nausea and vomiting (46.0%), then nasogastric tube obstruction in (44)% of patients.

Table (3) Shows nurse's practice were satisfactory in monitor urine glucose and acetone (64%) while their practice in abdominal assessment, respiratory assessment and weighing patient every other day were unsatisfactory. Table (4 ) show nurses level of practice in assessing the care after feeding. This table illustrate that nurse's level of practice in assessing the care after feeding was satisfactory as regard have patients remain in upright position 30- 60 min after feeding(74%) and washing hand(98%), while it was not satisfactory for other studied items.

Table (5 ) shows Relation between nurse's knowledge and their characteristics. The results indicate; as regard mean percent score of nurse's knowledge in relation to gender, females score was  $71.76 \pm 13.06$  while males' score was  $70.56 \pm 13.68$ . Non-married nurses had a score of  $73.65 \pm 12.62$  compared to  $69.69 \pm 13.32$  in married nurses ( $p = 0.28$ ). In addition, nurses with Bachelor degree had score of  $82.14 \pm 5.31$ , while those with THI had a score of  $75.11 \pm 12.56$  and finally nurses with secondary school (diploma) had the least score of  $67.63 \pm 12.94$ .

Table (6) correlation between mean score of nurse's knowledge and their age and experience, show that; there was proportional (positive), mild, statistically significant correlation between mean scores of nurse's knowledge about NGT and the mean of the nurse age (i.e., with increasing age of the nurses, their information increases).

In addition, there was moderate, positive and statistically significant correlation between experience and mean knowledge score (with increasing experience, there was increase in knowledge). Furthermore, there was powerful, positive, statistically significant correlation between age and experience (i.e., with increasing age, experience increases).

Table (7) Correlation between total practice scores and age & experience. illustrate that; there was inverse (negative), mild, statistically significant correlation between practice and age (this means that, with increasing age, practice is decreasing and vice versa); while there was

positive (proportional), moderate and statistically significant correlation between experience and practice. The correlation between total information and practice was very weak and not significant.

### Discussion

A feeding tube (nasogastric tube) is a flexible, small lumen, hollow tube that is inserted into the stomach. The duration of time that the tube is in place is dependent upon the patient's needs.

A feeding tube is recommended when a patient is unable to receive sufficient nutrition orally. Whether inserted through the nose, a nasogastric tube, or surgically inserted into the stomach, a gastrostomy tube, this is an invasive procedure. All invasive procedures have risk factors (Gromisch, 2009).

The majority of the nurses on the study, were females, also the majority of the nurses had a secondary degree of education. As regard their marital status were found that; nurses were married were more than single. This study indicated that most nurses have years of experience more than 4 years. Also the majority of nurses had secondary degree of education (diplom). This results agreed with (Mohamed, 2009) who was studying nurses performance during cardiopulmonary resuscitation in intensive and cardiac care units found that the majority of the nurses had secondary degree of education (diplom) and have years of experience more than 4 years.

Regarding training program, it was found that the majority of the nurses had no training program. Thus a bad care was introduced to the patients. This may be due to lack of in-service education program in hospitals. This finding is supported by (Mohammed, 2009) who found that the majority of nurses had no training programs (6. As stated by (Smeltzer and Bare, 2000) that an orientation program training is helpful for the new staff to find their places in the particular setting and to be able to adjust to the new assigned work function.

As regard the most common complications of patients with nasogastric tube feeding, nurse's mentioned that abdominal distension was the most common followed by nausea and vomiting, then nasogastric tube obstruction in of cases; Increased serum blood sugar; constipation and diarrhea. This result agreed with (Fernandez et al., 2001); who made a prospective and

observational study carried out in an internal medicine unit with 64 patients who were fed by nasogastric tube. The complication which appear were tube dislodgement; electrolyte alteration; hyperglycemia; diarrhea; constipation; vomiting; tube clogging and lung aspiration. So rinsing the tube feeding with 50-100 ml of water immediately before all of the formula has run through the tube because water flush the lumen of the tube, preventing future blockage by sticky formula (Ramont and Niedringhaus, 2008).

The present study also revealed that nurses' practice in the area of assessment of patient receiving tube feeding were inadequate. This result agree with (Ahmed, 1997). The majority of nurses in different units, did not perform the general assessment, abdominal assessment, or respiratory assessment. In addition, none of them estimated the amount of gastric residual in spite of their high knowledge score in this area. Also weighting patient before procedure not done. On the other hand the majority of nurse were monitor urine glucose and acetone level as apart of daily nursing activity not apart of feeding procedure. According to Potter and Perry, 2010 Weighting patient before feeding is important to determine appropriate formula and method of administration.

Ever changing health status and nutritional needs require continuous follow – up care until tube feeding is discontinued. As regard frequency distribution of the nurses in assessing care after feeding, found that most nurses were unsatisfactory as regard observation of client's response after feeding; clean patient's area, wash and clean reusable equipment. It could related to their knowledge deficit about follow- up care and its importance.

This is lined with (Ahmed,1997) who found that nurses did not observe patient response after receiving nasogastric tube feeding. In contrast there were satisfactory in washing hand after procedure. Hand wash, basically is a procedure with soap and tap water that; theoretically easy to be perform. Moreover, (Gould and Ream, 2005) had mentioned that hand washing is the most important effective method and the least expensive measure for infection prevention. On the other hand remain patients in upright position 30 – 60 minutes after feeding was done satisfactory. This position minimize risk of food

back flow and discourage aspiration, if vomiting occur.

As regarding to relation between knowledge and level of education, this results revealed that there is statistical significant positive relation between level of education (bachelor degree) with knowledge. This finding is in agreement with (Ahmed,1997) who was reported that bachelor degree nurses score were significantly better than diploma nurse possibly because of the basic knowledge received during academic years, which is different than that received by diploma nurse.

Regarding correlation between nurses knowledge and their characteristics. The current study showed that there was positive correlation between nurse's knowledge ,age and experience. Furthermore, there was positive correlation between age and experience; This disagreement with (Ahmed,1997) who found that years of experience have no significant effect on nurse's knowledge. Also this result was disagreement with (El-shafie et al., 1995) who found that knowledge does not depend on years of experience.

Regarding correlation between practice, nurses age and experience. The current study showed there was negative correlation between practice and age (this means that, with increasing age, practice is decreasing and vice versa); **while there was positive correlation between experience and practice, disagreement with (Ahmed,1997) who reported that years of experience have no significant effect on nurse's practice. Youniss, 1997 also found that there was no significant relation between nurses practice and years of experience.**

The correlation between total information and practice not significant. These finding may be due to that all studied nurse were lack of knowledge and skills, so there were nothing to compare with. This result agree with (Sobeh, 2005, Eldsoky,2004 and Ahmed, 2003). In this respect, (Kim, 1999) has claimed that nursing knowledge has been developed and established as a systemic and generalized knowledge base for practice.

The knowledge is necessary for nurses to improve their practice. This is based on the recognition that nursing knowledge production must also be viewed in conjunction with practice itself, as practice invades not only the

use of knowledge not also gaining of knowledge.

### Conclusion

In conclusion, the result of the present study revealed a general unsatisfactory level of knowledge and practice related to care of patient with nasogastric tube. This result agree with (Sobeh, 2005) who studied nurses knowledge and practice related to care of the mechanically ventilated patient. Also agree with (Ahmed, 2003).

Finally the frame of the present study aimed at shedding some light on the reality and nature of care provided to patients who fed through NGT. The revealed finding pointed out the necessity of improving the current nurse's knowledge and practice in the area of independent nursing procedure.

### Recommendations

Continuous evaluation of nurse's knowledge and practice is essential to identify nurse's needs. Standardized nursing procedure should be used to guide the nurse in dealing with patients with nasogastric tube. Training programs should be conducted to improve and update nurses' knowledge about care of patients with NGT. All healthcare workers , patients and careers should be educated and trained about safe administration of enteral feeds. Nurses should be taught the necessary skills related to patients assessment. Assessment sheet should be developed for nasogastric tube fed patients including (nutritional screening forms, physical assessment guide sheet, intake and out put charts and recording format).

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