Designing and Development of a nursing care plan based on Johnson's Behavioural Model in patient with carcinoma of larynx : A case study

Comment [YC1]: The title of the article is very interesting, and informative, giving a clear picture of the topic

Abstract

Comment [YC2]: Abstract is complete and describes the content of the article as a whole, thus providing clear information about the content of the article. Writing too many keywords and lacking focus, please revise the focus with important words related to the topic of the article.

Background: Behavioural model can be very easily applied in the clinical settings and nurses will be able to design and implement an appropriate nursing care planning using Johnson's behaviour model in patients with carcinoma of larynx.

Aim: The aim of this paper was to investigate the application clinical function of Johnson's Behavioural model in a patient with carcinoma of Larynx in a clinical setting.

Methodology: This is a case study, in which nursing process has been used in accordance with the Johnson's Behavioural model applied in Mr.X who is affected with cancer of Larynx.

Result: After implementing Johnson's Behaviour model in nursing process, the researcher achieved the goal easily.

Conclusion: Johnson's behaviour model is related to a person's environment and can be used in a clinical setting as a frame work for identifying the problems of a patient and helps in evaluating the quality of nursing care. The patient who has been studied in this paper reveals the application of Johnson's Behaviour model in a clinical setting.

Keywords: Monitoring, Older adults, Patient monitoring, Person centred nursing, Nursing skills, Nursing Theory

Introduction

Overview of Johnson's Behaviour Model

The Behavioural Systems model views the human being as a living open behavioural system which is comprised of interactive and interdependent components. The individual is a collection of behavioural subsystem that interrelated to form a behavioural system[6]. The system is comprised of seven subsystems a) Aggressive-protective b)Achievement c)Affiliative d) Ingestive e) Eliminative f) Dependency g) Sexual. So the behaviour is considered as the system not the individual. Each of these subsystems can be can be described and analysed in the view of structural and functional requirements.

The system functions are regulated by the person's age, sex, motivation, values and beliefs. Structural elements include

a) the drive or goal (direction and strength),

b) set (behavioural response pattern),

c) choice (behavioural alternatives available), and

d) the action (behaviour applied).

The functional requirements for each subsystem are nurturance, protection, and stimulation. These functional requirements, also termed sustenal imperatives.

Nurses using the model believed that an additional area of behaviour needed to be addressed[1, 2]. So a new subsystem also added, ie the eighth subsystem, restorative. The main components or the Metaparadigm of the theory includes, individual, nursing, environment and health. In the theory, theorist assumes the individuals as a behaviour system, with the

following characters such as repetition, regularity, prediction, and goal orientation. These characters focusing towards balance and that cause a relationship with the environment. Environment can be internal or external, that includes all factors which is related to individual's behavioural system and it affect the system as well.

Health is considered as stable and well balanced behavioural system. Nursing is an external force that organises the behaviour of the individual. Nursing activities does not depend on physician's interventions[3]. Medicine views a person as a biological system and nursing views as a behavioural system, because of this, the theorist consider nursing is unique from medicine. In this theory, nursing process is used when there is a sudden change in the environment (internal or external) which may lead to alteration in performance. Johnson believes that initial nursing intervention starts when pressure symptoms or lack of balance is observed[4]. Theorist considered nursing as an external adjustment factor, rather emphasizing on nursing process levels[3,7].

In behavioural model's view, nursing diagnosis is of four categories: dominance, incompatibility, insufficiency and discrepancy. Nursing interventions are planned based on the above four categories of nursing diagnosis. These interventions include providing subsystems by external mechanisms of facilitation, inhibition, restriction and defend[5].

Comment [YC3]: The background is very clear, provides an understanding of behavioral models in the application of nursing care, but has not discussed the concept of the patient with the larynx, and how the patient's disease affects the behavioral system. Please the authors add the concept of laryngeal carcinoma which is associated with behavior so that the reader understands that this behavioral model is appropriate to be applied in nursing care for patients with laryngeal carcinoma.

Patient Profile

Mr. X is a 62 year old man, with a graduation in mathematics that is conscious and well oriented of time, place and person. He went to a multidisciplinary hospital on 27 February 2021 accompanied by his son, with the symptoms of cough, dyspnoea on exertion, reduced appetite and changes in voice. He is a known case of hypertension and diabetic since

15yrs and 8 yrs respectively and he is on regular medications for the same. As per his son, hoarseness in voice was noticed from 2 week. Followed by the diagnostic evaluation, he got confirmed as Ca. Larynx. He has undergone Total Laryngectomy on 9th March 2021. Followed by the surgical procedure, he reported severe pain on VAS 8 score. Patient was not willing to adequate food and his appetite was reduced. The patient weighs were 70 kg and had lost 4 kg in the past 3 months. He had three children (a 37-year-old girl, 32-year-old boy and 25-year-old boy) and he lives with his younger son. His wife was retired from service and she is caring for him. The patient had a completely non standard diet in the past 2 years ago, due to obesity; as a result, he developed stomach ulcers and get treated with medications and a recent endoscopy showed he is in a better condition. One of his problems was loss of appetite and eating less because of the disorder. He complains about excessive fatigue, numbness, constipation due to inadequate dietary intake form a week before admission to the hospital. The results of his laboratory investigations are shown in Table 1. A review of the subsystems is shown in Table 2 and components of subsystems are shown in Table.3.

Application of Nursing theory - Johnson's Behavioural Model

The nursing process in a old- aged man with Carcinoma of Larynx, based on Johnson's Behavioural Model, is as follows:

Nursing Diagnosis 1: Acute pain (neck) related to surgical incision (Insufficiency in protective and aggressive subsystem).

Goal: Get relief from pain related to the surgical intervention

Measures: 1. Monitor for pain using VAS- Visual Analogue Scale (defend), 2. Provide comfortable devices (inhibit), 3. Give pain relief medications as prescribed by the doctor (facilities)

Comment [YC4]: Nursing diagnoses have been described according to the data on the patient profile. Please add a diagnosis related to complaints of tiredness and fatigue during activities, and please review your verbal communication skills after laryngeal surgery.

Nursing interventions have been prepared completely and refer to behavioral models.

Nursing Diagnosis 2: Imbalanced nutrition less than body requirement related to anorexia, cough

Goal: Mr. X will achieve and maintain adequate nutritional status.

Measures: 1. Monitor the nutritional status (facilities), 2. Monitor fluid and electrolytes (facilities),3. Check the weight daily (facilities), 4. Request the family to provide food according to his likes and dislikes (facilities), 5. Consume small and frequent diet (inhibit).

Nursing Diagnosis 3: Constipation related to reduced intake dietary fibres

Goal: Mr. X will report abdominal flatulence and have defecation at least once in ever two days

Measures: 1. Monitor the pattern of elimination (inhibit), 2. Evaluate the activity of the patient and type of diet he consumes (inhibit), 3. Request the patient to consume plenty of fluids, vegetables and fruits (inhibit) 4. Increase physical activity (inhibit), 5. Avoid gas forming foods (inhibit), 6. Administer laxatives as prescribed by the physician (inhibit).

Nursing Diagnosis 4: Disturbed sleep pattern related to pain

Goal: Mr. X will adequate sleep for at least 7 hours a day

Measures: 1. Provide a quiet and dark environment (facilities), 2. Drink warm milk before bed time (inhibit), 3. Avoid caffeinated drinks before bed (inhibit), 4. Avoid distraction (restricted).

Nursing Diagnosis 5: Deficient knowledge regarding low salt diet

Goal: Mr. X will name at least two foods that are harmful to hypertension and know the side effects of salty foods, and follow a low salt diet

Measures: 1. Educate about DASH diet (inhibit), 2. Training on complications of hypertension (inhibit).

Nursing Diagnosis 6: Deficient knowledge regarding low sugar diet

Goal: Mr. X will name at least two foods that are most harmful sugars for diabetes, know the side effects of sweeteners, and follow a low-sugar diet.

Measures: 1. Educate about diabetic diet (inhibit), 2. Training on the complications of hyperglycemias due to non-compliance with diet (inhibit).

Table 1: Laboratory test results

Lab test	Normal range	Patient's value
Haemoglobin	Men: 13.5-17.5gm/dl	13gm/dl
Platelet count	1.5-4.5Lakhs/mm^3	2lakh/ mm^3
FBS	70-110mmol/L	98mmol/L
Sr. Sodium	135-145mEq/L	140mEq/L
Sr. Potassium	3.5-5.2mEq/L	4.5mEq/L
WBC	5000-10000ml/mm^3	8000ml/mm^3
C- Reactive Protein	Less than 6.0	+2

Table 2: Investigating subsystems

Subsystems	**Instable behaviours**	**Stable behaviours**
Aggressive/ Protective **Drive:** Protecting the patient and others from potential risk factors and dangers. **Function:** Identify biological, environmental and potential risk factors for the patient	Mr. X feels severe pain in the operated area	Normal findings in the endocrine, nervous, skin, hair, nail and musculoskeletal system.

Achievement **Drive:** Mastery or control of self or the environment **Function:** Establishing appropriate goals, directing behaviour toward achieving that desired goals	Due to hospitalization, he was worried and upset.. He has difficulty in sleeping and sleeps 4-5 hrs a day. During the day he fells tired and lethargic due to insufficient sleep and diabetic neuropathy.	To control his diabetes, he was able to visit a doctor and following a diet and medication. Sleep disorders also resolved by actions such as creating a quiet and dark setting, drinking warm milk and minimizing distractions.
Affiliative **Drive:** Making others aware of their existence. **Function:** Provide focused attention, nurturing, physical aids, gaining confidence.	Due to impairment in the communication, the patient need a companion for assistance in communication	Psychiatric examination is normal. Constant companion was provided with client request to meet his needs.
Dependency **Drive:** to relate or belong to someone or something other than oneself and achieving empathy. **Function:** Develop and use IPR skills to achieve empathy.	Mr. X was frustrated by the lack of involvement in the treatment process	Mr. X was asked to participate in the treatment program.
Eliminative/ Ingestive **Drive:** Maintain physiological stability by removing a stress. Function: Maintain physiological stability by repelling and relieving stress, expressing emotions and ideas verbally or non-verbally, and recognising and interpreting the biological system that is readily available for secretion.	Mr. X has not had faecal excretion for the past 3 days. Anorexia	Renal, respiratory, pulmonary and gastrointestinal system examinations were performed and found normal.
Restorative: **Drive:** Internalizing the external environment to maintain and integrate the internal environment to satisfy or satisfy appetite. **Function:** Continue living through nutrition and correcting inappropriate patters of nutrition.	Mr. X eats more than half of his food due to the effects of the non-standard diet for the past 2 years and stomach ulcer with a reduction in stool excretion.	GI system examination was normal. After 3 days of hospitalization and care, there was an improvement in eating pattern and bowel elimination.
Sexual: **Drive:** Satisfaction and relaxation in sex. **Function:** To develop a self concept or self- identity based on gender, make a meaningful communication that provides sexual pleasure.	Mr. X suffers from sexual dysfunction, such as decreased libido after surgery and impaired parental role.	Mr. X's genital system was examined and it was normal.

Table 3. Subsystems and its components

Subsystem	Drive	Set	Choice	Action
Aggressive/ Protective	Reduce the patient's pain. Achieve a score of 3 out of 10 in VAS	Family and nurse support	Accept interventions given to reduce pain	Nurse monitor pain on VAS, and applies distraction techniques, applying cold compress, giving analgesics
Achievement	Have a comfortable sleep at least 7 hrs/ day	Family support	Accept interventions given to improve the quality of sleep.	Nurse provides a calm, dark and non stressful environment and gives his wife training on actions to enhance sleep.
Affiliative	-	-	-	-
Dependency	To relieve the discomfort and depression of the client. To accept the complications of the disease	Family and nurse support	Accept the complications of the disease and existing conditions which are transient and treatable conditions, and participate in health and personal actions until full independence	The nurse at the hospital and his wife at home give him the training and the emotional support he needs to overcome the stress
Eliminative/ Ingestive	Reduce abdominal flatulence, relieve constipation, and have bowel movements for at least once in two days	Family and nurse support	Accepts the necessary training to improve excretion.	Nurses provide necessary interventions like consuming plenty of liquids, fruits and vegetable, recommends increasing the activity and avoiding gas forming foods.
Restorative:	Show more interest in eating	Family and nurse support	Adopts necessary training to increase food intake	Mr. X's family will decorate his favourite food and the nurse will provide a relaxed setting top increase appetite and provide with small quantity of food.
Sexual:	Demonstrate that family members adhere to the absence	Family support	Accept the disease and implement training and	Nurse provides the information to the wife, like encouraging the expression of emotions

	of the person and interact positively with them		remedies.	and training on ways to adjust and refer to the psychologist. His wife, too aware of his problem and is taking measures to address the deficiency.

Evaluation

Comment [YC5]: please add evaluation for nursing diagnosis lack of knowledge

Mr. X was received 11 days of nursing care based on behavioural model. He gained sufficient confidence in the health care team and participated in all personal and medical work. After receiving the planned nursing interventions, his pain reduced and he was able to gain adequate strength on the 8th day onward in his activities of daily living, such as eating, brushing and grooming. His sleep disturbance was also reduced. Mr. X's appetite also improved and lethargy got reduced. Also he attained normal bowel movements and elimination pattern. In the sexual context, his wife was provided with the necessary information, Mr. X was fully conscious of the disease process and its complications, diet and physical activities. He was successful in controlling diabetes and hypertension.

Conclusion

On application of Johnson's Behavioural Model, Mr. X has improvement in his sense of self esteem, sleep quality, increased appetite, and improved elimination. The study acknowledge the effect of Johnson's Behavioural Model on the use of nursing process, which can be utilized in clinical setting and hospital, especially oncology unit, mental health unit as a frame nursing care. In future studies, it is suggested to apply other types of nursing theories to serve as a standard for performance improvement in assessing , diagnosing and planning effective nursing interventions to achieve, maintain and improve patient's satisfaction.

Reference

1. Auger, J. (1976). Behavioural systems and nursing. Englewood Cliffs, NJ: Prentice Hall
2. Holaday ,B.(1980). Implementing the Johnson model for nursing practice. In J.P.Riehl & C.Roy (Eds), Conceptual models for nursing practice (2nd ed.,pp.255-263).New York: Appleton-Century-Crofts.

3. Marlin,CS.Marilyn.E.(2015).nursing theories and nursing practice . F.A Davis Company, Philadelphia.

4. Ghanbari A, & M,S. (2004). Msking theory in nursing. Guilan university of medical sciences publication, guilan, Iran

5. Meleis,A. (2021) theoretical nursing: development and progress. Lippincott company

6. Samad Karkhah, Mohammad Javad Ghazanfari, Masoumeh Norouzi, Tahereh Khaleghdoust et al. (2020) .Designing a nursing care plan based on Johnson's Behavioural model in patients with wrist joint hematoma: A case study, Research Square

7. Atefeh Ghanbari, Somayesh Pouy (2018): designing nursing care program based on Johnson Behavioural model in children with Acute Lymphoblastic leukemia: A case Study, International Journal of caring sciences: 11(1), 631-638