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Can Nursing Officers Treat HBV and HCV Sucessfully

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1. Abstract

1.1. Introduction

Traditionally nursing officers, especially in developing country like India, are taken as channel to distribute medicines and preparing vital charts like input and output chart, temperature and pulse rate chart etc. The Nursing officers who work in transplant centres, especially in Intensive care unit are groomed in a way, so that they are able to interpret even small complaints or changes in vital parameters of patients, thus bringing it immediately into the knowledge of treating team, leading to better management of patient. Hence, it was thought to train Nursing officers in Hepatitis B and C over a period of six months and then to assess the knowledge gained by them in deciding investigations and treatment protocol.

1.2. Aims and Objectives

To train Nursing officers in Hepatitis B and C over a period of six months and then to assess the knowledge gained by them in deciding investigations and treatment protocol.

1.3. Materials & Methods

It was prospective study conducted at Department of Medical Gastroenterology, Post Graduate Institute of Medical Sciences (PGIMS), Rohtak, over a period of one year from 1st July, 2024 to 30th June, 2025. During this period two nursing officers were given training in Viral hepatitis clinic over a period of six months. The Viral hepatitis clinic run thrice weekly with approximately 80 patients in each clinic. In all 72 training sessions in hepatitis clinic were attended by two officers where they were imparted knowledge of viral hepatitis including B. C, A & E while treating these patients clinically. They were made to understand complete management including investigations required and their interpretation and treatment protocol to be followed. In total over a period of six months, total 5600 patients of HBV and HCV were treated (3000 HBV and 2600 HCV). In next six months, these two trained nursing officers, during hepatitis clinic were asked to first decide investigations and then decide management which was then checked by treating Gastroenterologist and then patient was started on treatment. In total 5000 patients of HBV and HCV (2700 HBV and 2300 HCV) were treated and followed over these six months for whom investigations and treatment were decided first by Nursing officers and counterchecked by treating gastroenterologist before putting on final treatment protocol. A pre-test and post -test after six months and one year of clinical training was done, regarding assessment of improvement in their approach towards the management of HBV and HCV patients.

1.4. Results

A pretest containing one hundred questions (fifty each of HBV and HCV) related to various aspects of patient management including diseases, diagnostic investigations, drugs and prognosis was taken and after six months and one year of continuous training post-test of same one hundred questions were taken and improvement was assessed. In all, in both the nursing officers, there was significant improvement in the post-test score. The pre-test score varied between 55-60 and post- test score ranged between 93-96.

1.5. Conclusion

In a developing country like India where there is shortage of trained doctors, thus it is not feasible to achieve the required doctor-patient ratio. Hence, it becomes more important to train the Nursing officers in management of viral hepatitis including HBV and HCV which lead to better patient management and improved outcome.

2. Introduction

Clinical teaching in nursing is the process of guiding and supporting nursing students in clinical settings which helps in developing skills like communication, critical thinking, professional values, learning about nursing and the delivery of care to patients, families, and communities and exploring ethical issues. Clinical education of undergraduate nurses remains an integral part of the nursing curriculum and forms the foundation for bridging the theory-practice gap [1]. Therefore, the nursing curriculum needs to be aligned

to the clinical setting to ensure that graduates are equipped to face the challenges of complex and dynamic healthcare delivery system [2]. There is still need of clinical training of nursing officers even after completion of their undergraduate courses, when they are posted in indoor wards for assisting in management of patients. Traditionally Nursing officers, especially in developing country like India, are taken as channel to distribute medicines and preparing vital charts like input and output chart, temperature and pulse rate chart etc. The Nursing officers who work in transplant centres, especially in intensive care unit are groomed in a way, so that they are able to interpret even small complaints or changes in vital parameters of patients, thus bringing it immediately into the knowledge of treating team, leading to better management of patient. The author had chance to work in liver transplant centre during three years super-speciality training in Gastroenterology and was exposed to Liver ICU management of many critical patients including liver transplant ones. Here, author personally visualized the performance of trained nursing officers in active management and applied same concept of training in the parent institute which is Model treatment center (MTC) under National Viral Hepatitis Control Program (NVHCP) and is high flow center for Hepatitis B and C patients.

2.1. Aims and Objectives

To train Nursing officers in Hepatitis B and C over a period of six months and then to assess the knowledge gained by them in deciding investigations and treatment protocol.

2.2. Material and Methods

It was prospective study conducted at Department of Medical Gastroenterology, Post Graduate Institute of Medical Sciences (PGIMS), Rohtak, over a period of one year from 1st July, 2024 to 30th June, 2025. During this period two nursing officers were given training in Viral hepatitis clinic over a period of six months. The Viral hepatitis clinic run thrice weekly with approximately 80 patients in each clinic. In all 72 training sessions in hepatitis clinic were attended by two officers where they were imparted knowledge of viral hepatitis including B. C, A & E while treating these patients clinically. They were made to understand complete management including investigations required and their interpretation and treatment protocol to be followed. In total over a period of six months, total 5600 patients of HBV and HCV were treated (3000 HBV and 2600 HCV). In next six months, these two trained nursing officers, during hepatitis clinic were asked to first decide investigations and then decide management which was then checked by treating Gastroenterologist and then patient was started on treatment. In total 5000 patients of HBV and HCV (2700 HBV and 2300 HCV) were treated and followed over these six months for whom investigations and treatment were decided first by Nursing officers and counter checked by treating gastroenterologist before putting on final treatment protocol. A pre-test and post -test after six months and one year of clinical training was done, regarding assessment of improvement in their approach towards the management of HBV and HCV patients.

2.3. Steps of Training

A) Teaching regarding baseline disease of patient- Normally nursing officers are primarily involved in distribution of medicines and preparation of vital charts. In viral hepatitis clinics, they were taught along with residents about details of viral hepatitis disease of patient, covering all aspect from aetiology, pathogenesis, clinical presentation, differential diagnosis, diagnostic investigation and treatment part including prevention strategies. The nursing officers followed the patients whenever they came for follow up.

B) Interpretation of diagnostic investigations- The role of Nursing officers along with residents is to regularly update diagnostic investigations in the medical records of the patients but they had no idea of what the reports meant in analysis of disease. Thus, they were regularly given knowledge about every biochemical, radiological, endoscopy and fibroscan investigations. They were able to appreciate changes in the tests and interpret whether they were on improvement or deteriorating side.

C) Knowledge about prescribed medicines- The attitude of nursing officers of limited role of just giving injections and oral medicines on time was changed by regularly training about details of each and every antiviral drug being prescribed to patient which included proper dosage, effects, side effects and interactions.

D) Fibroscan training- Our department being a model treatment centre under National viral hepatitis control program (NVHCP), is a high flow centre for hepatitis B & C patients for whom Fibroscan is mandatory. All the diagnostic investigations and treatment are provided free of cost under NVHCP. It being a non-invasive procedure was easily and effectively learnt by Nursing officers. It helped in providing fibroscan services without any waiting period [3].

E) Management of hepatitis B and C patients- Our department being a model treatment centre under National viral hepatitis control program (NVHCP), is a high flow centre for hepatitis B & C patients and on daily basis get eighty old and new patients for consultation. We daily run hepatitis B & C clinic where nursing officers were trained in assessment and management of hepatitis B and C patients. Over one year period, the nursing officers were independently able to treat hepatitis B and C patients [4,5].

2.4. Observations

The two nursing officers before starting of this bed side teaching were clearly explained about the aim, process and benefit of the same. The prior consent was taken and both of them underwent one hundred questions pre-test and same was repeated after six months and one year of clinical training and assessment of improvement in the scores was done. It showed substantial improvement in the scores which varied from 36-38 with mean of 37. The same phenomenon was observed in the accuracy of treatment plan made by nursing officers of HBV and HCV patients after completion of training and accuracy percentage was 95%-97% in HBV and HCV patients respectively. The training period was good enough for over a period of six months and Nursing officers were

exposed to 5600 HBV and HCV patient management before deciding for treatment plan of 5000 HBV and HCV patients. The patient safety was maintained, as treatment plan chalked out by Nursing officers were first verified by the treating Gastroenterologist.

2.5. Statistical Analysis

All the data was entered in Microsoft Excel and was analysed using SPSS 15.0 version.

Table 1: Showing Pre-test, Post-test and improvement in scores of Nursing officers.

Total Nursing Officers (2)	Pre-test Score	Post-test Score	Improvement in Score
43 yrs Female	60	96	36
38 yrs Female	55	93	38

Table 2: Showing Distribution of HBV and HCV Patients observed by Nursing officers during training period.

Total Patients Treated After Training	Hepatitis B Patients	Hepatitis C Patients
5000	2700	2300

Table 3: Showing Distribution of HBV and HCV Patients treated by Nursing officers after training period.

Total Patients of HBV Treated After Training	Proper Management Planned	Corrections required in Management Plan
2700	2565 (95%)	135 (5%)

Table 4: Showing Accuracy of HBV Management Plan made by Nursing officers after training period.

Total Patients of HBV Treated After Training	Proper Management Planned	Corrections required in Management Plan
2700	2565 (95%)	135 (5%)

Table 5: Showing Accuracy of HCV Management Plan made by Nursing officers after training period.

Total Patients of HCV Treated After Training	Proper Management Planned	Corrections required in Management Plan
2300	2231 (97%)	69 (3%)

3. Discussion

In developed country, there is concept of getting non-invasive tests by paramedical staff and after seeing contribution of trained nursing officers in liver transplant centre, the idea of training nursing officers in management of outdoor and indoor patients. It does not require additional efforts because bed side teaching is traditionally done for residents on clinical rounds where nursing officers are also present. The nursing officers are thought to reply for any queries regarding medicines, vital parameter charting and personal hygiene of patient. Thus, it was thought to actively involve nursing officers in management of viral hepatitis patients which does not require any additional manpower or financial implications. The only caution was not to over expect from nursing officers and to gradually increase their clinical acumen, so that they accept this transition happily and in true letter and spirits. The basic teaching which is provided during undergraduate training (B.sc Nursing) to nursing officers is not completely adequate in clinical management issues of patient and is more theory based. Only selected nursing officers move ahead to pursue M.sc Nursing in one speciality where they get good exposure of that field. Thus, clinical training and exposure of majority of B.sc Nursing is required for better management of patients. The need of the hour is to make nursing officers strong arm of health care professionals where their role has to be redefined from just distributing drugs to being actively involved in management of patients, after learning clinical aspects of the diseases. Moreover, the interacting period and time spent by nursing officer with patient is always more than the doctors and its normal behaviour of patient and their relatives to ask repeatedly about progress of disease from doctors and nursing officers. Hence, the answers of all the team members including nursing officer have to correct and same, so as to avoid any unwarranted confusion and allay apprehensions in mind of patient and their family members [5]. There are studies on knowledge, practices and attitude in Nursing officers which showed poor knowledge regarding diet required in hepatitis infection (29%) and vaccination schedule (53%). Whereas good knowledge was observed in items like availability of vaccine (96%), screening in prenatal (89%), and transmission of infection (94%) [6]. Another study showed that (54.5%) of the studied subjects have got a satisfactory level of knowledge regarding prevention of HCV transmission [7]. Our study is in alignment with analysis done by Caixia etal [8] on16 studies, whereby they identified 13 nursing roles that primarily in-

volved (1) health education and counselling for informed patient decision-making regarding hepatitis B prevention, vaccination, screening, and disease monitoring; (2) case management and health promotion to advocate elimination services at multiple levels and enable equitable access among marginalised communities; and (3) running specialist clinics to lead advanced practices in prescribing and carrying diagnostic tests formulating evidence-based individualised care plans, and coordinating care throughout the disease process. Interventions with these roles achieved pooled hepatitis B screening and detection rates of 64 % and 2 % respectively, increased the odds of hepatitis B virus vaccination by 2.61 times, improved immunity rate, and enhanced patient adherence to antiviral treatment and monitoring of liver comorbidities. The authors have already successfully done Fibroscan training for health care workers, including Nursing officers [9] and generated awareness for HCV in them [10] and same motivated for training of Nursing officers for treatment of Hepatitis B and Hepatitis C.

4. Results

A pretest containing one hundred questions related to various aspects of patient management including diseases, diagnostic investigations, drugs and prognosis was taken and after six months and one-year continuous training post-test of same one hundred questions were taken and improvement was assessed. The pre-test score varied between 55-60 and post- test score ranged between 93-96. In both the nursing officers, there was significant improvement in the post-test score which varied from 36-38 with mean improvement of 37.

5. Conclusion

Nurses play multifaceted roles in advocating hepatitis B screening and vaccination, initiating outreach efforts in marginalised communities, and leading advanced practices that effectively contribute to the elimination of hepatitis B. Policymakers should consider how nurses may help the achievement of the elimination target. In a developing country like India where significant percentage of population is suffering from viral hepatitis including hepatitis B and C and there is shortage of trained doctors, thus it is not feasible to achieve the required doctor-patient ratio. Hence, it becomes more important to train the available health care workers which include nursing officers which lead to better patient management and improved outcome. Moreover, this training does not require any additional manpower or finances and can easily be done along with existing clinical training of resident doctors.

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