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An Assessment of Knowledge Level on Insulin Therapy Among Nurses Before and After Educational Workshop

P KASTHURI*, SONIA*

ABSTRACT

Objective: This study was conducted to compare the difference between the pre-test and post-test knowledge level on insulin therapy among nurses. **Methods:** The study included 100 participants (newly joined nurses), at Apollo Hospitals, Chennai, Tamil Nadu. The knowledge scores of the participants were assessed before and after the workshop. **Results:** The mean knowledge score for all the participants improved significantly after attending the workshop, irrespective of age. More than 90% participants reported having knowledge on insulin therapy in post-test compared to about 58% in the pre-test. About 85% participants showed having adequate knowledge, and about 10% of the participants had moderately adequate knowledge. The remaining 5% of the nurses possessed inadequate knowledge in post-test. **Conclusion:** The current study demonstrated that mean knowledge score improved significantly for all the participants after attending the workshop. To provide quality diabetes care and education, the nurses should obtain continuing professional education.

Keywords: Diabetes, insulin, knowledge, education

More than 425 million people currently have diabetes. Most of these are cases of type 2 diabetes. This condition can be prevented through regular physical activity, healthy and balanced diet and healthy living environments. Families have a significant role to play in addressing the modifiable risk factors for type 2 diabetes and in using appropriate guidelines, which promptly reverse hypoglycemia.

It is important to prevent, recognize and manage hypoglycemia secondary to the use of insulin or insulin secretagogues. It is always better and more effective to prevent hypoglycemia rather than treating it once it occurs.

Therefore, it becomes important to identify and counsel people with diabetes who are at high risk for hypoglycemia about the ways to prevent it. The treatment for hypoglycemia is aimed at detecting and treating low blood glucose promptly using an intervention/strategy/guideline/protocol/algorithm that can help eliminate the risk of injury and relieves symptoms quickly.

We conducted a study at Apollo Hospitals, Chennai, India to ascertain the difference in knowledge level on insulin therapy among nurses before and after a workshop.

A workshop was designed to tackle the everyday concerns, issues and enhance problem solving when treating insulin-dependent patients through didactic presentation, small groups and in-house style formats, which would refine understanding and ensure confidence towards diabetes management using various real-life scenarios.

OBJECTIVE/AIM OF THE STUDY

- To compare the difference between the pre-test and post-test knowledge level on insulin therapy among nurses.
- To link the significant association between the selected demographic variables and knowledge level on insulin therapy among nurses.

*Nurse Educator
Apollo Main Hospitals, Chennai, Tamil Nadu
Address for correspondence
P Kasthuri
Nurse Educator
Apollo Main Hospitals, Chennai - 6 Tamil Nadu
E-mail: 1125122@apollohospitals.com

METHODOLOGY

Study Participants

The study included 100 participants (newly joined nurses), at Apollo Hospitals, Chennai, Tamil Nadu.

The knowledge scores of the participants were assessed before and after the workshop.

ANALYSIS AND RESULTS

The mean knowledge score of all the participants improved significantly after attending the workshop, irrespective of age. There was an increase in mean knowledge score in post-test when compared to pre-test score (Fig. 1). More than 90% participants reported having knowledge on insulin therapy in post-test compared to about 58% in the pre-test. About 85% participants showed having adequate knowledge (>75%), and about 10% of the participants scored between 50% and 75%, suggesting that they had moderately adequate knowledge. The remaining 5% of the nurses scored <50%, which means that they possessed inadequate knowledge in post-test (Fig. 2).

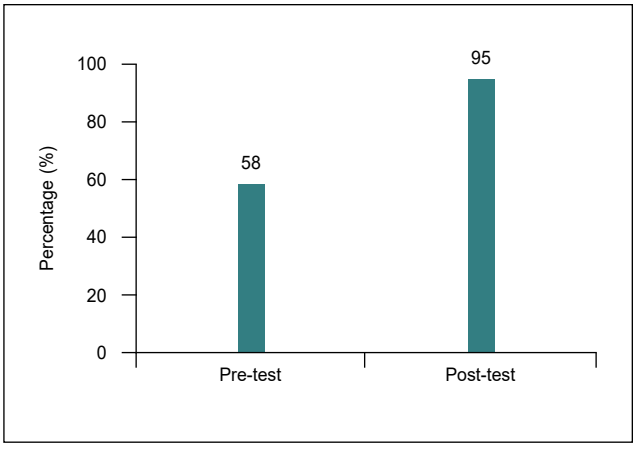


Figure 1. Percentage distribution of participants with knowledge on insulin therapy on pre- and post-test among nurses.

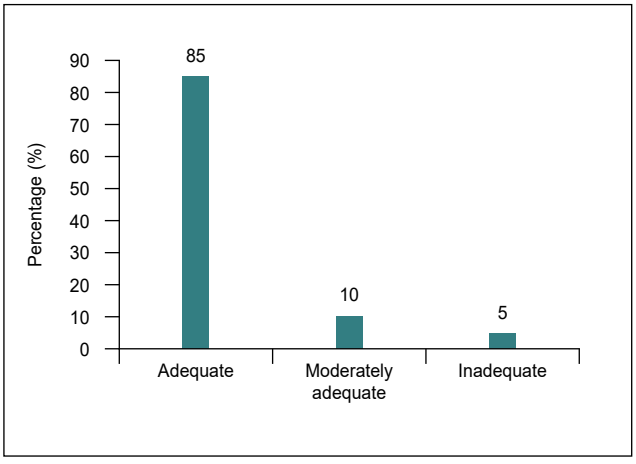


Figure 2. Percentage distribution of post-test knowledge level on insulin therapy among nurses.

DISCUSSION

Some people with diabetes do not show the early warning signs of low blood glucose. This is termed as hypoglycemia unawareness. Seen most often in type 1 diabetes, people with type 2 diabetes can also have the condition. These people are required to check their blood glucose level more often so that they can identify when hypoglycemia is about to occur.

A change in medications, meal plan or physical activity routine may also be needed. Hypoglycemia unawareness develops when frequent episodes of hypoglycemia cause changes in the way the body reacts to low blood glucose levels.

Education plays a vital role in diabetes care; however, it is still in an evolving state in developing countries like India. It is essential for care of people with diabetes who want to achieve positive outcomes.

Education is an important part of nursing care. Since it is important to provide quality information to the diabetic patients, it is essential for all nursing personnel to keep updating their knowledge.

Hypoglycemia can be addressed by multidisciplinary team approach involving physicians, nurses, dietician, diabetic educators and physiotherapists, who treat from the perspective of patient education, and also consider altering the medications. None of the patients should be treated without proper evaluation of the etiology of hypoglycemia.

CONCLUSION

The current study demonstrated that mean knowledge score improved significantly for all the participants after attending the workshop. Therefore, education plays a key role in improving care of diabetes patients. Nursing personnel should be regularly updated about all that is new in diabetes care. To provide quality diabetes care and education, the nurses should obtain continuing professional education.

Implementation Process

Education is not only a part of treatment but it is the treatment in diabetes. Therefore, nurses need to identify the needs of diabetes patients, as health education is an integral part of nursing care.

Cost of Implementation: Expected cost for charts for workshop/study is ₹ 5,000/14 charts for all wards.

Challenges/Difficulties: To monitor and assess the impact of the study, after implementation, as a trial, over a period of 3 months from December 2019 to February 2020.

Project Impact/Outcome of the Study

There are considerable gaps in knowledge on insulin therapy among nurses. This led us to conduct the sessions and seminars for nurses to teach them the basic knowledge regarding the management of diabetes focusing mainly on inpatient component. Subsequently, standardized protocols and algorithm (both hand written and computerized) have been designed for management of inpatient hypoglycemia based on latest published guidelines for guidance among nurses. In addition, online education courses for nurses are planned to be introduced to fill the gap in diabetes education.

SUGGESTED READING

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COVID-19: The R_0 is an Intrinsic Feature of the Virus

The pandemic seems to be guided by direct, human-to-human transmission. As a result, people have been told to practice social distancing, which seems to be a simple but effective way to drive down the virus's reproductive number — i.e., R_0 (R naught). This represents the average number of new infections generated by each infected person.

R_0 is not an intrinsic feature of the virus. It can be reduced by means of containment, mitigation and herd immunity.

For the epidemic to begin to end, the reproduction rate has to come down to below 1.

In the early days of the outbreak in China, before extreme travel restrictions were imposed in Wuhan and nearby areas, and before everyone could realize the exact impact that the epidemic might have, the R_0 was 2.38, as per a study published in the journal *Science*. This means a highly contagious disease.

On January 23, China imposed intense travel restrictions and put hundreds of millions of people into a sort of lockdown as authorities aggressively limited social contact. The R_0 declined below 1, and the epidemic has been controlled in China, at least for now.

The virus does have an innate infectivity, as it appears from the way it binds to receptors in cells in the respiratory tract and then takes over the machinery of the cells to multiply. Its ability to spread depends also on the susceptibility of the human population, including the density of the community.

If someone has a seriously infectious virus and is sitting by himself in a room, the R_0 is zero. He/she can't give it to anybody. This is also the basis of lock down. (*Excerpts from The Washington Post*)

- Allergic Cough
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- Smoker's Cough
- Cough with Bronchial Asthma and Bronchitis
- Drug Induced Cough
- Cough with LPRD/GERD*



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*Laryngopharyngeal/ Gastro-oesophageal reflux Disease
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