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Research Article

KNOWLEDGE, ATTITUDE AND AWARENESS ABOUT GENERAL ANAESTHESIA AMONG DENTAL STUDENTS

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ABSTRACT

Background: General anaesthesia is the state produced when a patient receives medications for amnesia, analgesia, muscle paralysis, and sedation. An anaesthetised patient can be thought of as being in a controlled, reversible state of unconsciousness. Anaesthesia enables a patient to tolerate surgical procedures that would otherwise inflict unbearable pain, potentiate extreme physiologic exacerbations, and result in unpleasant memories. General anaesthesia uses intravenous and inhaled agents to allow adequate surgical access to the operative site.

Aim: To analyse the knowledge, attitude and awareness about general anaesthesia among dental students.

Materials and Methods: The study was designed as a prospective, questionnaire based survey. A set of questions were prepared enquiring the basic knowledge about general anaesthesia among dental students. A total of 100 students were selected among the 3rd, 4th and the interns (those who undergo clinical practices).

Result: Around 90% of the Participants had basic knowledge about general anaesthesia, 78% of the participants had no knowledge about conscious sedation when compared to general anaesthesia. 8% of them are not aware about the drugs used for general anaesthesia and their administration.

Conclusion: The need for both theoretical and practical training, continuous update of drugs used for the whole team should be stressed as a part of clinical governance framework for ensuring the delivery of high quality service. It is also necessary to have appropriate equipment and ensure that the equipments are properly maintained.

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INTRODUCTION

General anaesthesia is a state of complete loss of sensation with a reversible loss of consciousness. It is a medically induced state to allow procedures that would otherwise be intolerably painful for the patients. Anaesthesia can be administered through various routes that include inhalation, intravenous, intramuscular, subcutaneous, oral and rectal. After the administration, they enter into the circulation and are transported to their biochemical site of action¹. The overall aim of general anaesthesia is to ensure

1. unconsciousness,
2. amnesia which means loss of memory,
3. analgesia which is loss of response to pain.
4. Immobility loss of reflexes of autonomic nerves system.
5. Paralysis is caused very rarely that leads to the relaxation of skeletal muscles.

General anaesthesia affects the central nervous system, the functions of cerebral cortex, thalamus and spinal cord are interrupted that paves ways to attain the aims of general anaesthesia¹. Anaesthesia is generally divided into four stages.

Stage 1-It is the period between the state of administration of the general anaesthetic drug and the loss of consciousness.

It is also called the induction stage. The patient undergoes change from analgesia without amnesia to analgesia with amnesia. During this stage the patient is able to speak^{2,3,4}.

Stage 2-It is called the excitement stage and is preferred to be in smaller duration, the reason is that it causes irregularities in heart rate and difficulties in respiration. It may also lead to vomiting and pupillary dilation.

Stage 3-In this stage the patient is unconscious and ready for a surgery. Hence, this stage is called the surgical anaesthesia. Respiratory depression occurs and the eye movements slow down and gradually stops. This stage is further divided into 4 planes that are important during

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surgery. The eyes become fixed, Corneal and laryngeal reflexes stops, Pupil dilates, Shallow abdominal respiration².

Stage 4-This stage leads to severe brain stem depression. Hence is called the overdose stage. It is capable of producing cardiovascular collapse and cessation of respiration. Hence it is a must to provide cardiovascular and respiratory support during this stage.

Post operative care is that which concludes the general Anaesthesia in which the patients should have pain free awakening and management plan for post operative pain relief. The major complications in general anaesthesia is the post operative shivering, it leads to increase in oxygen consumption, cardiac output, heart rate, catecholamine release, blood pressure and intraocular pressure. Warmed intravenous fluids and increased ambient temperature are the commonly used techniques to reduce shivering^(2,5). In dentistry general anaesthesia is rarely used, dentists usually prefer conscious sedation since it is extremely easy and safe. Yet it is used in certain cases like the one in which the patients is extremely anxious, potentially traumatic procedures removal of wisdom tooth that is completely covered by bone and certain oral surgeries. It's not recommended for routine dental work like fillings. The potential risk involved is too high to warrant the use of General Anaesthesia. For things like fillings, a breathing tube must be inserted, because otherwise, little bits of tooth, other debris or saliva could enter the airway and produce airway obstruction or cause illnesses like pneumonia^{6,7,8}.

MATERIALS AND METHOD

The study was designed as a prospective, questionnaire based survey.

A questionnaire enquiringly about the knowledge and awareness regarding general anaesthesia was administered to students of 3rd years, final years and interns (those who undergo clinical practices) of private dental college. A total of 100 students were selected and an online link was given and their responses were obtained online. The questions had a set of options and the participants have to choose one among the options (Table 1). They questions were simple and easy to answer. The results obtained were collected based on the options. The results were then tabulated. Statistical analysis was done and the results were framed into pie charts.

RESULT

In this study the questionnaire had some basic questions to test the participants' knowledge about general anaesthesia and anaesthesiologist. Around 90% of the students had at least basic knowledge about general anaesthesia. In dentistry, General anaesthesia is used mainly in oral and maxillofacial surgery and in pedodontic procedures in which the patient is extremely anxious or not cooperative. Though more than half of the candidates had an idea about general Anaesthesia, but they did not have adequate knowledge about general anaesthetic as compared to local anaesthesia. Figure 1 explains how many participants have proper knowledge about general anaesthesia, only 36% of the participants were confident that they have a proper knowledge about general anaesthesia. Around 4% had no proper idea about general anaesthesia. On comparison with knowledge about general anaesthesia and local anaesthesia about 78% of the participants didn't had a good knowledge about conscious sedation when compared to general anaesthesia. Only a few of them have undergone surgeries under general anaesthesia and lot of them donot have any experience about general anaesthesia.

Table 1 Sample Questionnaire

Questions	Options
Do you have knowledge about General anaesthesia/ Anaesthesiology as a separate medical discipline.	1. Yes 2. No 3. A little 4. No idea
Do you know the difference between general and local anaesthesia?	1. Yes 2. No
Have you undergone any treatment under general anaesthesia?	1. Yes 2. No
Are you aware of the drugs used for general anaesthesia in present day? If yes which of the following are you aware of.	1. Chloroform 2. Ether 3. Other inhalation drugs 4. Intravenous agents 5. No idea
Will you prefer your patients to be put on general anaesthesia for minor procedures like extractions?	1. Yes 2. No 3. Depend on the case
Do you know the Role of an anaesthesiologist in treatment?	1. As a skilled assistant to surgeon 2. Other definitive role in operation theatre 3. No idea
How is general anaesthesia administered by an anaesthesiologist?	1. Using certain vapours 2. Using certain vapours with monitoring 3. Using certain equipments 4. Using certain equipments with monitoring
What does an anaesthesiologist do in an operation theatre?	1. Only administer drugs once and go away 2. Administer drugs and monitors patient intravenous operatively 3. Does something in the post operative period also
Have you attended any seminars regarding general anaesthesia?	1. Yes 2. No

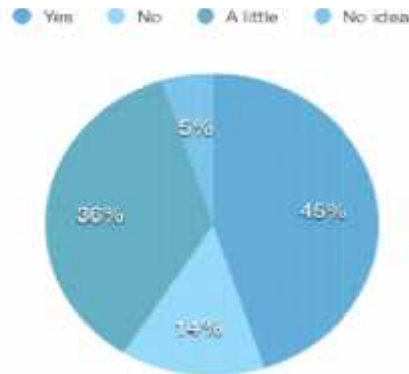


Figure 1 Do you have any knowledge about General Anaesthesia / Anaesthesiology as a separate medical discipline?

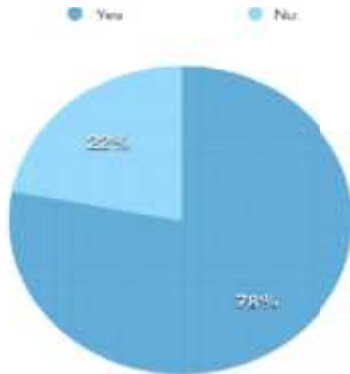


Figure 2 Do you know the difference between general and local anaesthesia?

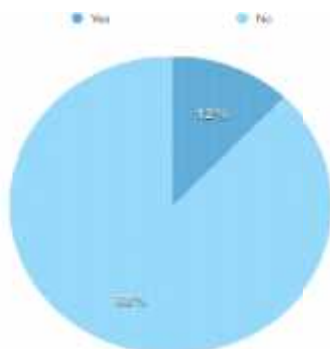


Figure 3 Have you undergone any treatment under general anaesthesia?

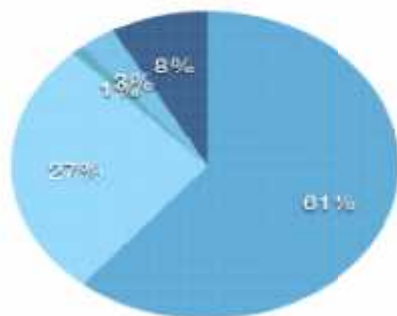
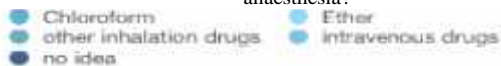


Figure 4 Are you aware of the drugs used for general anaesthesia in present day? Which of the following are you aware of

In figure 4: it is clear that not all of them are aware about the drugs used in general anaesthesia, around 8% of them are not aware about the drugs used for general anaesthesia and their administration. General anaesthetic drugs can be administered both intravenously and through inhalation. Only 27% of the participants are aware about the route of administration can be both intravenously and through inhalation, this is shown in figure 6. On view of their knowledge anaesthesiologist and their role in medical field is a little disappointing. In fig 7, around 9% of them don't know the role of anaesthesiologist during surgery.

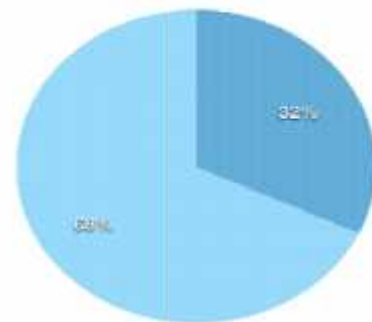


Figure 5 Will you prefer your patients to be put on general anaesthesia for minor procedures like extractions?

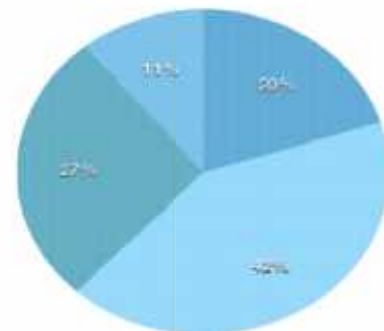


Figure 6 Drugs used for general anaesthesia can be administered through which route?

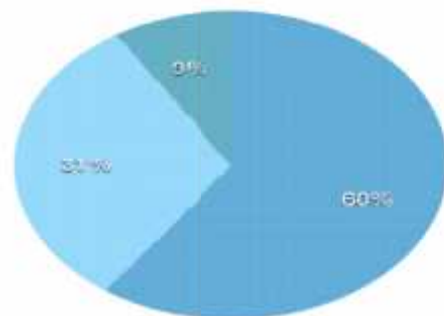


Figure 7 Do you know the Role of an anaesthesiologist in treatment?

Almost 60% of them are aware that anaesthesiologist are skilled assistant to the surgeon. Anaesthesiologist also play an important role in the preoperative period. They are responsible for monitoring the subject throughout the course of the surgery. In figure 9, Though a few people know that they are responsible for monitoring the subject very few people around 6% know that they play a role in post operative period also. More than half of our participants have not tended any seminars regarding general anaesthesia or about the role of anaesthesiologist, this is shown in figure 10.

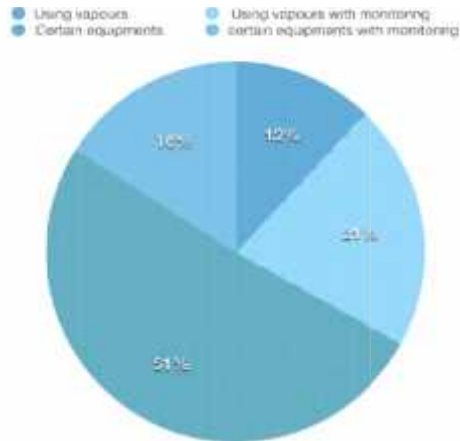


Figure 8 How is general anaesthesia administered by an anaesthesiologist?

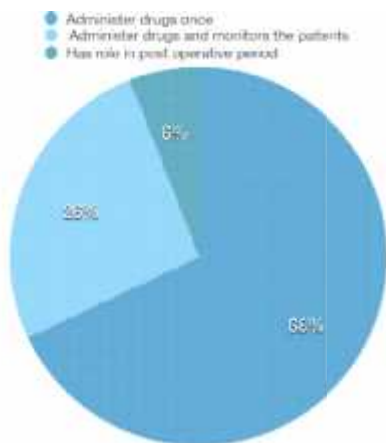


Figure 9 What does an anaesthesiologist do in an operation theatre?

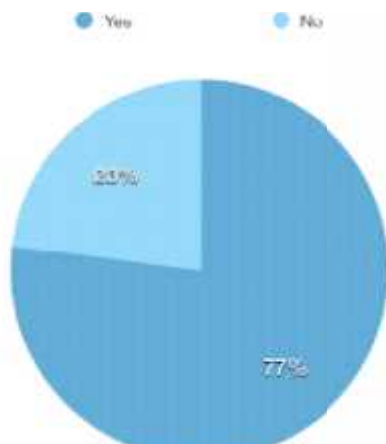


Figure 10 Have you attended any seminars regarding general anaesthesia?

DISCUSSION

Every year October 16 is celebrated as World Anaesthesia day. It is celebrated after the first demonstration of ether anaesthesia on October 16,1846. Hence, the significance of anaesthesia is known in the early 90s. Hence it is important for everyone in the medical field to have adequate knowledge about general anaesthesia. A survey has been conducted in the year 2009, on knowledge about general Anaesthesia and anaesthesiologist among general population⁴. A group of people both literate and illiterate have participated. They were divided into 5 groups based on literacy level. Among the persons who answered that the anaesthesiologist does something in the post-operative period 86.21% in group 5 and 76% in group 3 believed that the anaesthesiologist only monitors the patient, but 58% in group 3 answered that the anaesthesiologist manages the immediate post-operative complication. This study is a little contrary to our study in which the dentists have a better idea about anaesthesiologist. But in our study most of them are unaware of the intra operative patients monitoring. This is similar to a survey conducted by shevdeK and Panagopoulos⁵. Thus the findings in our study are little disappointing that the students don't have adequate knowledge about general anaesthesia as much as they are aware about conscious sedation. In a study conducted by Usha gurunathan, about public's perception about anaesthesiologist, the role of anaesthesiologist after induction was not clear. This is similar to our study. On asking about the role of anaesthesiologist in the operation theatre most of the people answered that the anaesthesiologist administers drug once and goes away. This was in contrast to the findings of the surveys conducted in developed countries where a majority of patients felt that the anaesthesiologist stays during operation to look after the patients' vital function.^(10,11,12,7,8) Better knowledge about various anaesthesia techniques and their possible complications in various conditions of patients may reduce the number of medico legal litigations.^{14,9} The major reason for this is ignorance towards general anaesthesia and anaesthesiologist, since dentists prefer conscious sedation over general anaesthesia for about 80% of their cases. Survey about general anaesthesia is taken among the general population or patients who undergo surgeries under general anaesthesia. There is not any well known survey conducted among dental students regarding general anaesthesia. In general population, we would suggest to educate people about general anaesthesia. When it is among dentist we should first eliminate their ignorance towards general anaesthesia, only if they know it's importance it would be possible. Organising seminars and additional classes would help them acquire more knowledge about general Anaesthesia. To know more about anaesthesiologist, and their role in medicine field, the dentist should have discussion classes with an anaesthesiologist. This would create more awareness among the dentists and their attitude towards general anaesthesia would also change.

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