

Awareness On Usage Of Lorazepam Among Dental Students And Practitioners

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Abstract:

Introduction: The use of sedatives has established efficacy and safety for managing anxiety regarding dental treatment. Fear and anxiety regarding dentistry continue to persist despite the modern advances in local anaesthetic agents.

Aim: To evaluate the awareness on usage of lorazepam among dental students and practitioners.

Materials and Methods: In our study, a self structured questionnaire was prepared and distributed among dental students and practitioners through an online portal. The questionnaire had 10 questions regarding the awareness, uses, advantages and disadvantages of lorazepam. This study was approved by the Institutional ethical board. 100 responses were obtained through an online portal. All the responses were imported to excel and tabulated, data's were imported to spss software, chi-square test was done.

Results: Among 100 responders, 62 were UG students; 25 were PG students and 13 were practitioners. Out of 100 responders, 77% of them are aware of usage of lorazepam; 23% of them are not aware of usage of lorazepam. Out of 100 responders, only 40% of them have administered and used lorazepam clinically in their practice; the rest 60% of them are aware but have never used clinically.

Conclusion: Most of the responders are aware of the usage of lorazepam, its advantages and disadvantages but only few of them have used it clinically and experienced. Therefore, there is a greater need for raising awareness on usage of lorazepam clinically in dentistry as it is mainly used to manage anxious patients at recommended dose of. 1-4 mg/day. Among these 100 responders no UG students have used it in clinical practice but they are theoretically aware of its usage.

Introduction:

Dental considerations for patients with special needs (PNEs) covers a diverse group of people with one or more health conditions, whether chronic or acute, requiring specialized and individualized clinical management [1]. One of the great challenges for adequately satisfying outpatient care is to make the patient co-operate, which in many cases does not happen due to fear and anxiety. In addition, the patient may not be able to develop emotional control of these factors or may not have full intellectual development, and their capacity for understanding and cooperation may be affected [1].

The primary option is to apply methods of psychological conditioning, however, they may not be sufficient for adequate dental treatment. In these cases, conscious sedation is an effective and safe alternative that permits the patient to turn out to be cooperative, promoting the accomplishment of a less traumatic and more resilient treatment. The main objectives of sedation are reduction of anxiety and fear, as well as mild analgesia and reduction of nausea and salivary flow [2][3][4].

Among the pharmacological methods of sedation in dentistry, oral benzodiazepines (BZDs) are one of the most widely used alternatives to this degree of sedation [5]. They comprise a group of drugs that have proven efficient and promotes safety in clinical use [6] . BZDs action occurs through the interaction of the drug with specific receptors in the central nervous system, promoting sedation, hypnosis, anxiety control, skeletal muscle relaxation, anterograde amnesia, anticonvulsant activity, reduction of salivary flow and vomiting reflex [7][8] . Minimal effects may occur in the cardiovascular and respiratory systems, such as mild reduction in blood pressure and heart and respiratory rates [7]. The BZDs most used in dentistry are: Diazepam, Lorazepam, Alprazolam, Midazolam and Triazolam, being classified according to the onset of action and the duration of the anxiolytic effect [9][10]. Midazolam was the drug of choice for outpatient dental procedures because, compared to other drugs, it allows administration in children, adults and older persons, has a rapid onset of action and presents a short duration of pharmacological effect [11]. Our team has extensive knowledge and research experience that has translate into high quality publications[12–23]..

Although studies point to oral sedation with lorazepam as an effective option in dentistry, there are few studies that have evaluated the effect of this sedation on dental care in patients with special needs.

The objective of this study is to evaluate the awareness of conscious sedation with lorazepam at dental care among dental students and practitioners .

Materials and Methods:

A cross sectional questionnaire survey was conducted in an online portal using Google forms. The advantages of using an online setting include untainted opinion and a wide reach. The sample size considered was a hundred dental students and dental practitioners from Chennai. Methods undertaken to minimise sampling bias include clear survey goals and randomisation with optional analysis. Validity was provided by homogenisation and cross verification. The data was collected from the general public in India and represented by pie charts. The questionnaire includes demographic details like age, gender and occupation and to assess the knowledge and awareness.

Results:

Of the 100 responders, 62% were Dental undergraduates; 25% were Dental Postgraduates and 13% were Dental practitioners; 77% of the respondents have used lorazepam in their practice while 23% of the respondents have never used lorazepam in their practice;

54% of the respondents are aware of its overdose limits, 46% are not aware of its overdose limits;

44% of the respondents have responded yes on prescribing lorazepam on pregnant women while 56% have responded no on prescribing lorazepam on pregnant women;

41% of respondents have opted 1-4 mg/D as the recommended dose of lorazepam while 45% of respondents have opted 1-2 mg/D as the recommended dose of lorazepam and 14% have opted 2-4 mg/D as the recommended dose of lorazepam;

37% of the respondents have chose drowsiness as the symptom on overdose of lorazepam while 29% have chose loss of balance as the symptom on overdose of lorazepam and 34% chose coma as the symptom on overdose of lorazepam;

34% of the respondents have chosen mental instability as the major drawback of lorazepam while 13% have chosen drug abuse as the major drawback of lorazepam and 53% have chosen anxiolytic effect as the major drawback of lorazepam.

40% of the respondents have highly recommended lorazepam on uncooperative patients while 34% have recommended lorazepam on highly anxious patients and 26% have highly recommended lorazepam on all painful procedures.

Out of 100 respondents, 77 respondents have used lorazepam clinically among which undergraduates were 39; postgraduate students were 25 and Dental practitioners were 13 that is all the postgraduates and dental practitioners who took up this survey have used lorazepam clinically and among 62 undergraduate students only 39 of them have used lorazepam clinically while other 23 undergraduates have never used lorazepam clinically.

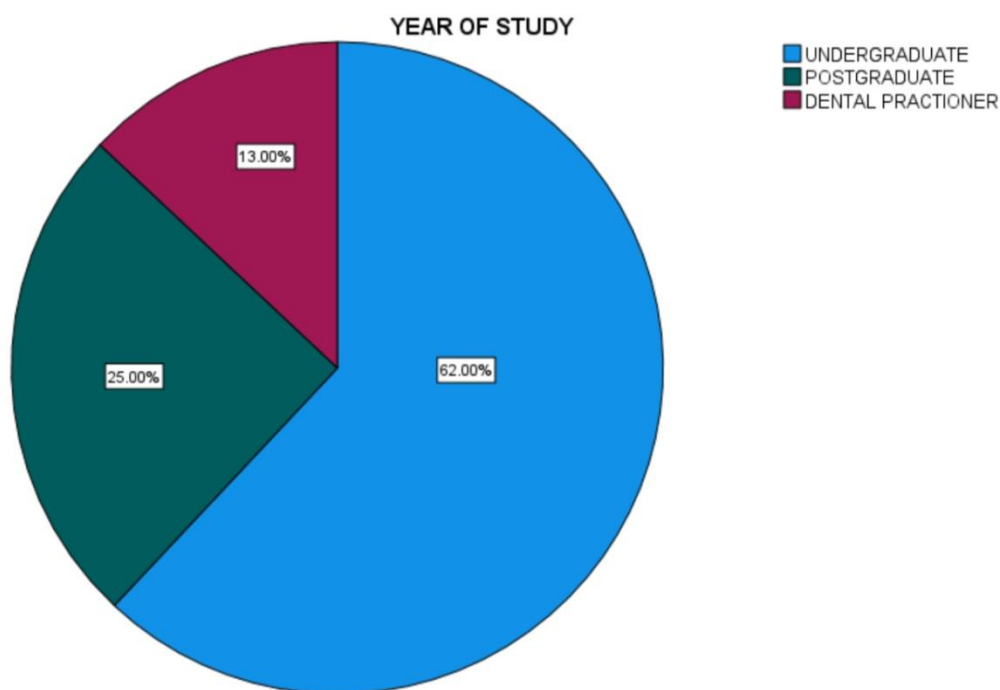


Figure 1: Pie chart showing the year of study distribution among dental students. Blue colour denotes undergraduate students; green colour denotes postgraduate students and purple colour denotes dental practitioners. (62.00%) were undergraduate students, (25.00%) were postgraduate students. (13.00%) were Dental practitioners.

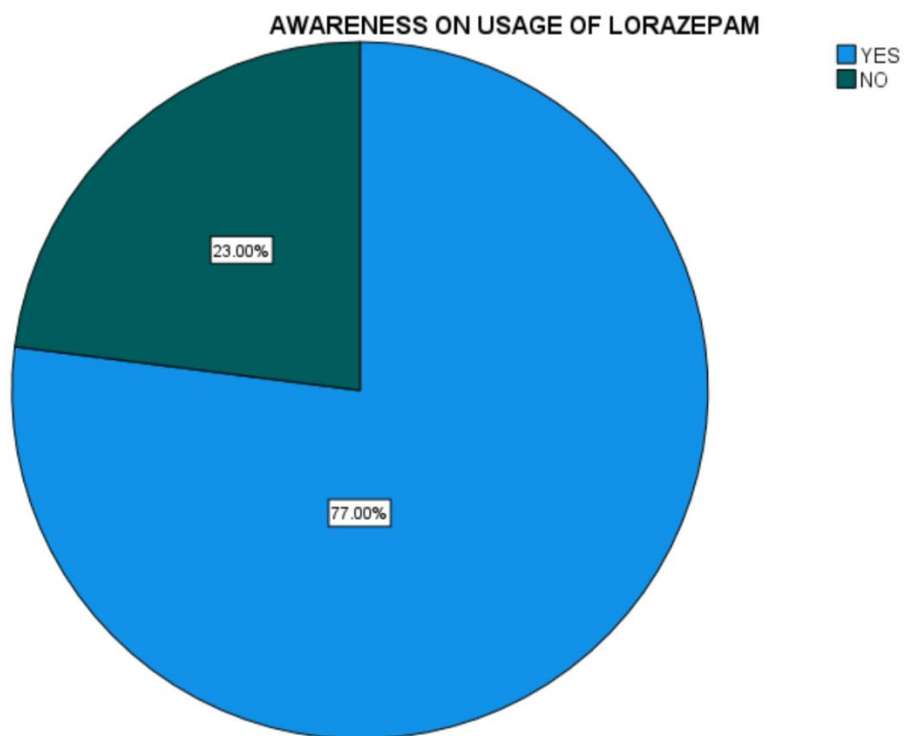


Figure 2: Pie chart showing the awareness distribution on usage of lorazepam among dental students. Blue colour denotes yes; green colour denotes no. (77.00%) of the responders were aware of lorazepam usage whereas (23.00%) were not aware of lorazepam usage. Therefore, most of the respondents are aware of the usage of lorazepam.

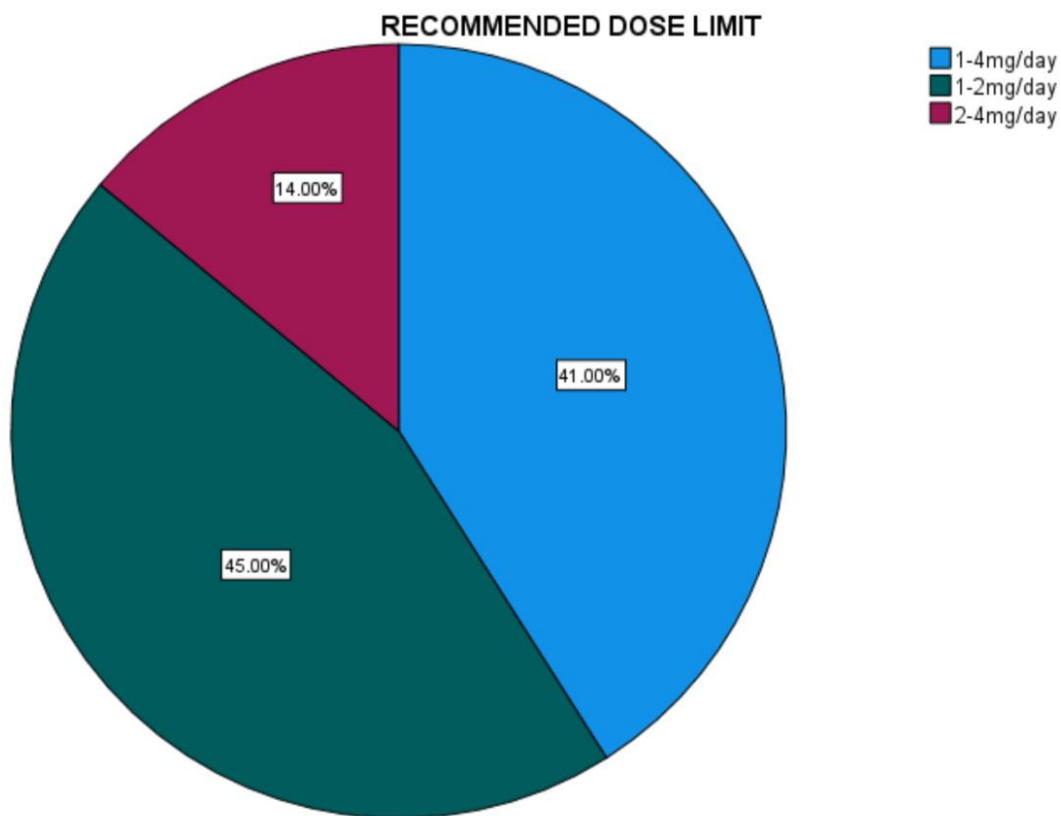


Figure 3: Pie chart showing the dose limit distribution which is to be more recommended by the dentist . Blue colour denotes 1-4 mg/day; green colour denotes 1-2 mg/day and purple colour denotes 2-4 mg/day. (41.00%) of the responders recommend 1-4 mg/day, (45.00%) of the responders recommend 2-4 mg/day and (14.00%) of the responders recommend 1-2 mg/day. Therefore, the most recommended dose of lorazepam is 1-2 mg/day.

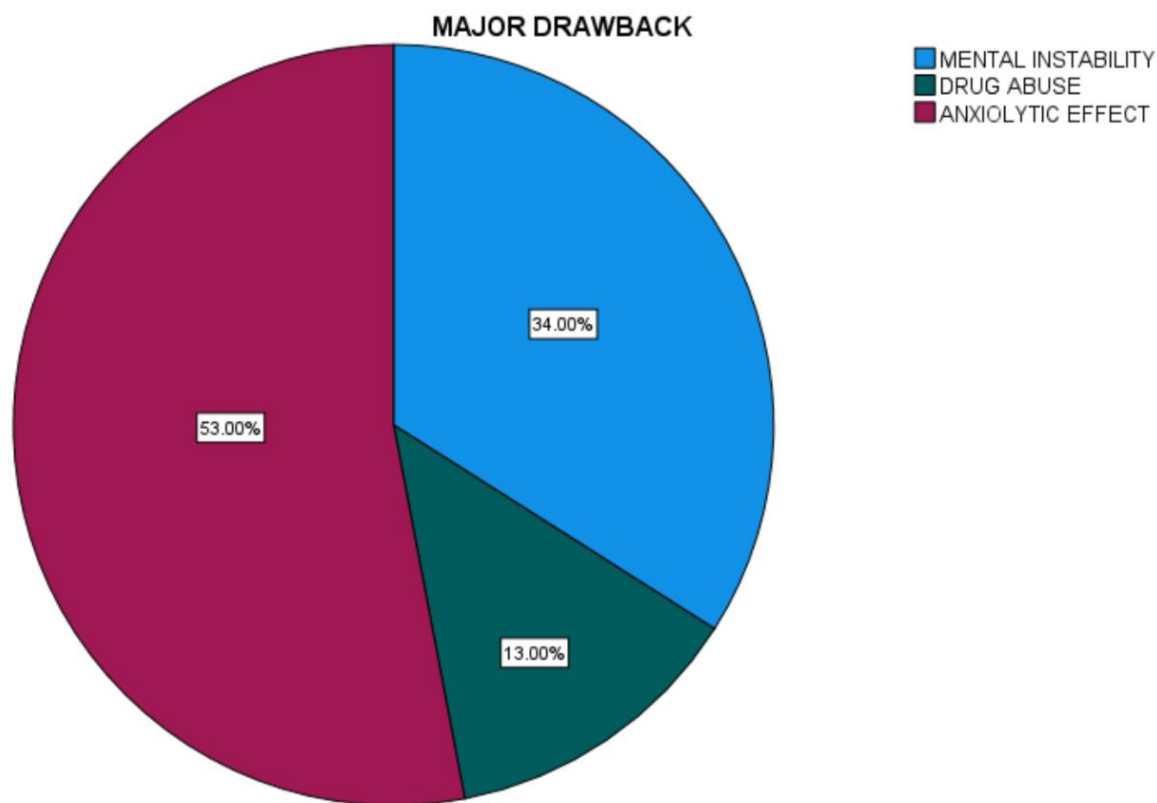


Figure 4: Pie chart showing the drawback distribution on using lorazepam. Blue colour denotes mental instability; green colour denotes drug abuse and purple colour denotes anxiolytic effect. (34.00%) of the responders have noticed mental instability as the major drawback on using lorazepam, (13.00%) of the responders have noticed drug abuse as the major drawback on using lorazepam and (53.00%) of the responders have noticed anxiolytic effect as the major drawback on using lorazepam. Therefore, the most noticeable drawback of lorazepam usage is the anxiolytic effect.

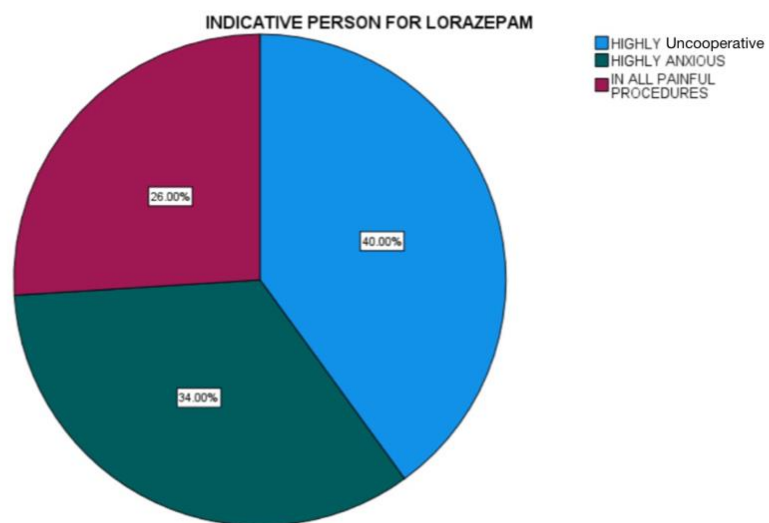


Figure5: Pie chart showing the indication distribution on using lorazepam. Blue colour denotes highly uncooperative patient as an indication; green colour denotes highly anxious patient as an indication and purple colour denotes all painful procedures as an indication. (40.00%) of the responders have used lorazepam clinically on highly uncooperative patients, (34.00%) of the responders have used lorazepam clinically on highly anxious patients and (26.00%) of the responders have used lorazepam clinically on all painful procedures. Therefore, most of the responders have used lorazepam clinically on highly uncooperative patients.

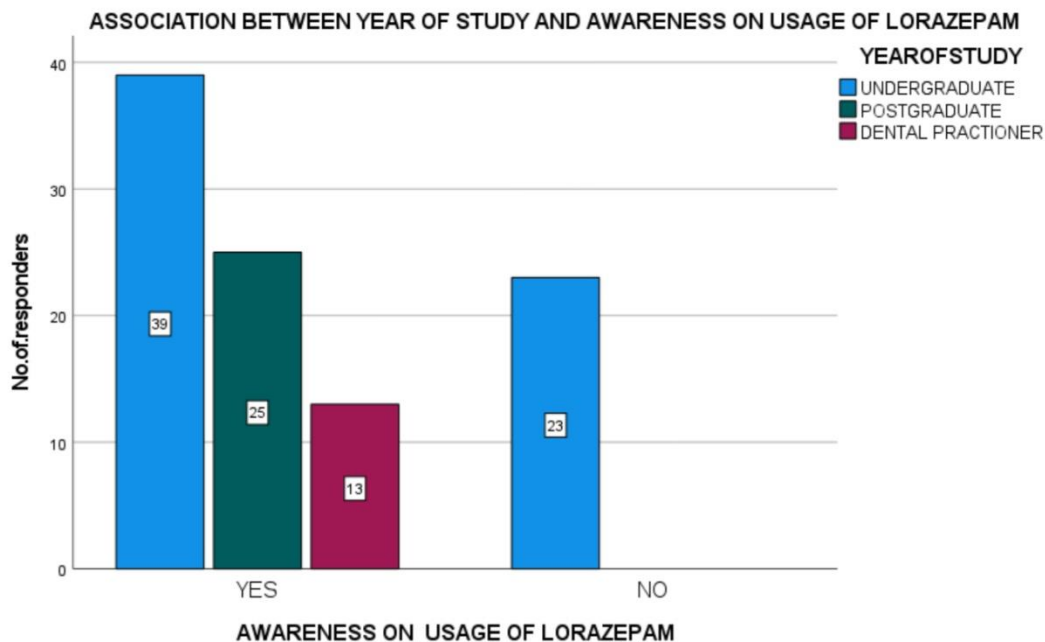


Figure 6: Bar graph showing the association between year of the study and awareness on usage of lorazepam. The X-axis represents the awareness on usage of lorazepam and the Y-axis represents the year of study. Chi square test was done and the association was found to be statistically significant. Pearson's chi square value: 18.307, df: 2, p- value: 0.000 ($p < 0.05$).

Hence, statistically significant, providing (77.00%) are aware on usage of lorazepam, among which all the postgraduate students and dental practitioners are aware whereas only 39 out of 62 undergraduate students are aware and (23%) undergraduate students are not aware on usage of lorazepam

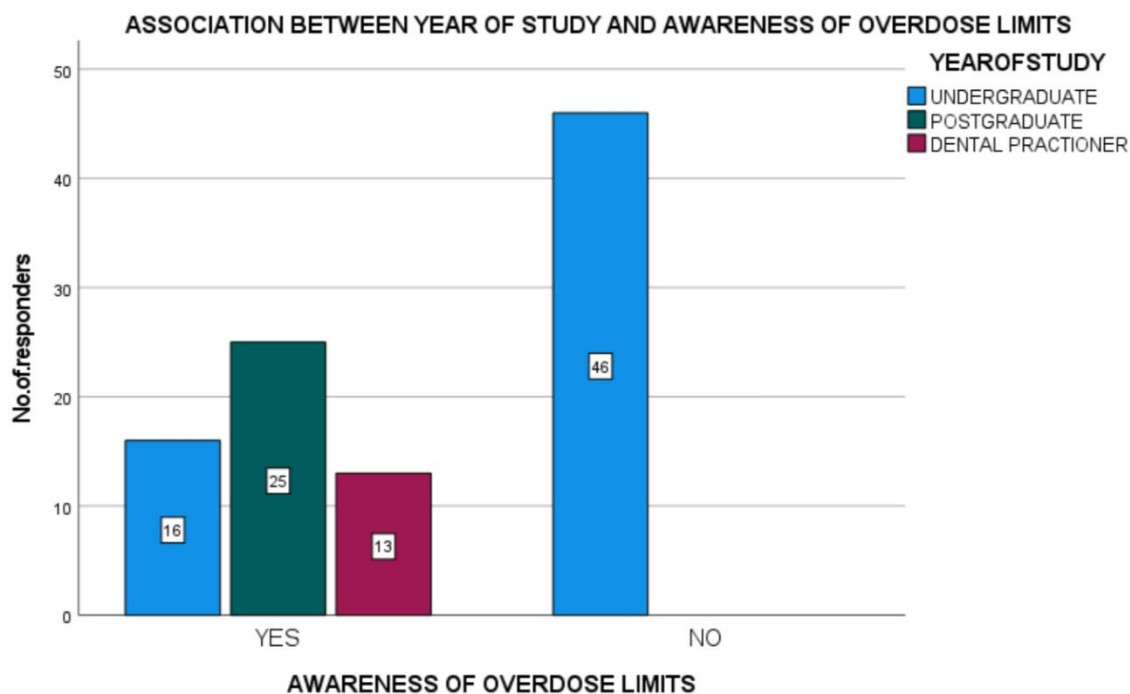


Figure 7: Bar graph showing the association between year of the study and awareness on overdose limits. The X-axis represents the awareness on overdose limits and the Y-axis represents the year of study. Chi square test was done and the association was found to be statistically significant. Pearson's chi square value: 52.210, df: 2, p-value: 0.000 ($p < 0.05$).

Hence, statistically significant, providing (54.00%) are aware on overdose limits of lorazepam, among which all the postgraduate students and dental practitioners are aware whereas only 16 out of 62 undergraduate students are aware and (46%) undergraduate students are not aware on overdose limits of lorazepam

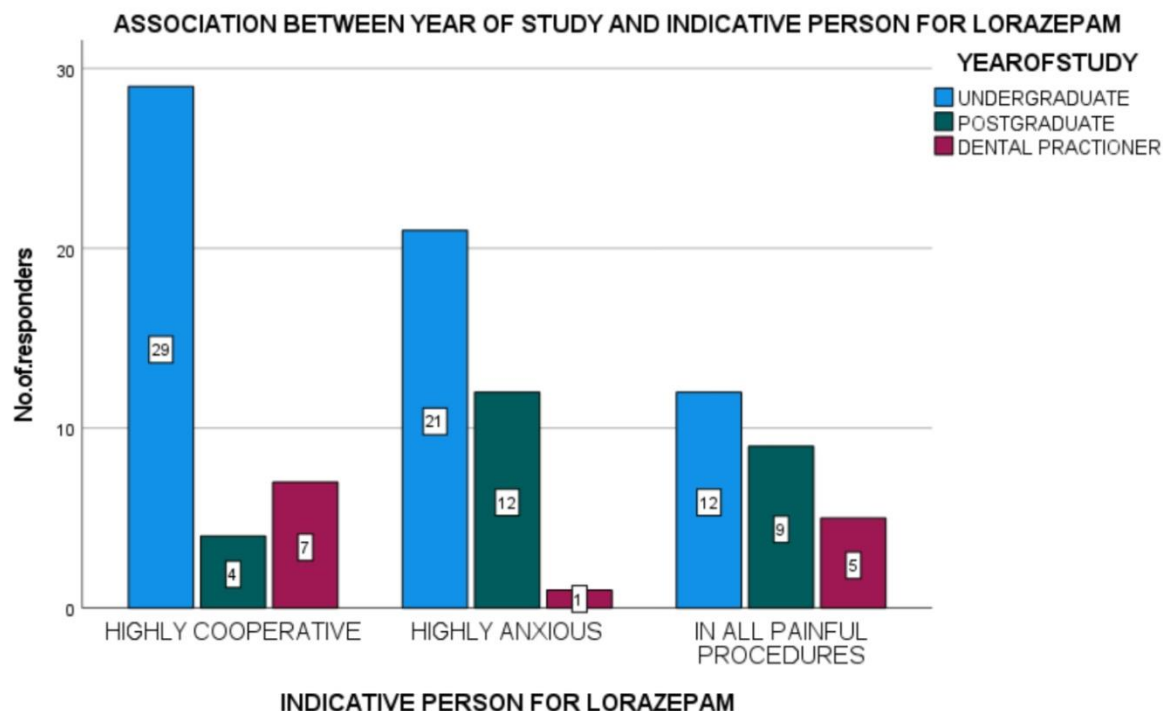


Figure 8: Bar graph showing the association between year of the study and indicative. The X-axis represents the awareness on overdose limits and the Y-axis represents the year of study. Chi square test was done and the association was found to be statistically significant. Pearson's chi square value: 52.210, df: 2, p-value: 0.000 ($p < 0.05$).

Hence, statistically significant, providing (40.00%) of responders have used lorazepam clinically on highly uncooperative patients, (34.00%) of the responders have used lorazepam clinically on highly anxious patients and (26.00%) of the responders have used lorazepam clinically on all painful procedures. Therefore, most of the responders have used lorazepam clinically on highly uncooperative patients.

Results and Discussion:

The use of various pharmacological methods of sedation in dentistry has been increasing with the increase in time. Many studies are carried out with the purpose of describing, analyzing and improving the techniques and results in the dental care of patients with diagnoses or clinical conditions that make

it difficult for the professional to handle, thus enabling appropriate outpatient treatment with benefits for patients and professionals. This study was developed based on this assumption and focused on specific objectives in order to assess the contribution that oral sedation would have in the dental management of special non-cooperative patients [24]. The association based on demographic parameters were statistically analysed and the results are mentioned. The survey questions had responses as mentioned below,

According to figure 1, (62.00%) were undergraduate students, (25.00%) were postgraduate students. (13.00%) were Dental practitioners.

According to figure 2, (77.00%) of the responders were aware of lorazepam usage whereas (23.00%) were not aware of lorazepam usage. Therefore, most of the respondents are aware of the usage of lorazepam.

According to figure 3, (41.00%) of the responders recommend 1-4 mg/day, (45.00%) of the responders recommend 2-4 mg/day and (14.00%) of the responders recommend 1-2 mg/day. Therefore, the most recommended dose of lorazepam is 1-2 mg/day.

According to figure 4, (34.00%) of the responders have noticed mental instability as the major drawback on using lorazepam, (13.00%) of the responders have noticed drug abuse as the major drawback on using lorazepam and (53.00%) of the responders have noticed anxiolytic effect as the major drawback on using lorazepam. Therefore, the most noticeable drawback of lorazepam usage is the anxiolytic effect.

According to figure 5, (40.00%) of the responders have used lorazepam clinically on highly uncooperative patients, (34.00%) of the responders have used lorazepam clinically on highly anxious patients and (26.00%) of the responders have used lorazepam clinically on all painful procedures. Therefore, most of the responders have used lorazepam clinically on highly uncooperative patients.

According to figure 6, Pearson's chi square value: 18.307, df: 2, p-value: 0.000 ($p < 0.05$). Hence, statistically significant, providing (77.00%) are aware on usage of lorazepam, among which all the

postgraduate students and dental practitioners are aware whereas only 39 out of 62 undergraduate students are aware and (23%) undergraduate students are not aware on usage of lorazepam

According to figure 7, Pearson's chi square value: 52.210, df: 2, p- value: 0.000 ($p < 0.05$). Hence, statistically significant, providing (54.00%) are aware on overdose limits of lorazepam, among which all the postgraduate students and dental practitioners are aware whereas only 16 out of 62 undergraduate students are aware and (46%) undergraduate students are not aware on overdose limits of lorazepam

According to figure 8, Pearson's chi square value: 52.210, df: 2, p- value: 0.000 ($p < 0.05$). Hence, statistically significant, providing (40.00%) of responders have used lorazepam clinically on highly uncooperative patients, (34.00%) of the responders have used lorazepam clinically on highly anxious patients and (26.00%) of the responders have used lorazepam clinically on all painful procedures. Therefore, most of the responders have used lorazepam clinically on highly uncooperative patients.

Lorazepam is considered an intermediate-acting benzodiazepine given its elimination half-life of approximately 10–20 hours. However, this system of classification is actually misleading. Despite a half-life shorter than diazepam, the actual sedative effect is generally longer because it has lower lipid solubility which slows its redistribution from the brain [25]. Lorazepam undergoes phase II hepatic metabolism via glucuronide conjugation to inactive metabolites that are rapidly excreted via the kidney, rather than phase I hepatic metabolism which is affected by competition by the cytochrome P450 enzyme system often resulting in active metabolites. Lorazepam is therefore less affected by variables such as advanced age, hepatic dysfunction, or drug-drug interactions. It has an oral bioavailability of 83 to 100% with peak plasma levels occurring 1–2 hours after administration. The onset of action following oral administration occurs within 60 minutes [26]. Usual adult doses for dental sedation patients can range from as low as 0.5 mg to 4 mg depending on patient and procedural criteria [27][28][29].

Limitation:

Small sample size which does not provide results of the entire population Since it was a retrospective study, manual errors may occur during data collection.

Further, multicentric studies with diverse populations can be done to determine the awareness on usage of lorazepam among dental students and practitioners.

Conclusion:

Most of the responders are aware of the usage of lorazepam, it's advantages and disadvantages but only few of them have used it clinically and experienced. Therefore, there is a greater need for raising awareness on usage of lorazepam clinically in dentistry as it is mainly used to manage anxious patients at recommended dose of. 1-4 mg/day. Among these 100 responders no UG students have used it in clinical practice but they are theoretically aware of it's usage.

Author contributions:

All authors have equal contribution towards this research work

Conflict of interest:

Nil

Reference:

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