EFFECTIVENESS OF ONLINE PRACTICAL EXERCISES AMONG THIRD-YEAR DENTAL UNDERGRADUATE STUDENTS -A QUESTIONNAIRE-BASED SURVEY.

Running title: Knowledge and awareness of online practical classes.

ABSTRACT:

INTRODUCTION: When teachers and students synthesize knowledge from multiple subjects and experiences, objectively weigh dramatically different viewpoints, and integrate various inquiries, education may become transformative. Online applications have been marketed as effective and well-accepted methods for improving student learning in health professional education, including physiotherapy. This study aimed to evaluate the efficacy of online technology for physiotherapy teaching and learning, as well as user expectations. Educators may create such opportunities by encouraging students to develop their capacities for study, creativity, critical synthesis, creative expression, self-awareness, and intentionality in critical learning spaces.

MATERIALS AND METHODS: Survey was distributed to third-year undergraduate students. It suggests that most of the students are aware of online practical classes and also they have knowledge about online classes.

RESULTS AND DISCUSSION: It is concluded that types of classes students prefer, 69% prefer online classes, 31% prefer offline classes, gaining of knowledge in online classes 91% can gain knowledge, 9% are not able to gain knowledge, Preference in online classes 49% preferred theories, 49% prefer practical classes, 2% prefer none Association between gender and preferences of online practical classes was done using chi-square test $p=2$, $p>0.05$ which is found to be statistically not significant.

CONCLUSION: It is concluded that most of the students are aware, and students also have knowledge about online practical exercises and classes, the results and this study was compared with other studies.

Keywords: Awareness, comfortable, innovative method, knowledge, online practical.

INTRODUCTION:

Online tutoring is tutoring in an online, or networked, an environment in which teachers and students or learners interact from various physical locations, its literature also states that participants can be separated by the means of time. It also involves many methods to teach for the learner. The learners also should have an equal interest in online listening. Experiencing significant changes that challenge traditional approaches of teaching or learning in college or school classrooms. These changes reflect the increasing diversity of the student body, including students of different racial and ethnic backgrounds, as well as age diversity, educational pathways, and academic readiness, to name but a few. Other improvements include new pedagogies that discuss active and problem-based learning, including courses conducted entirely online, and, perhaps most notably, educational technology (1).

Online courses are a strong and increasing part of undergraduate education, but many biology instructors are doubtful of online instruction's effectiveness. For both the teacher and the student, online and integrated classes provide greater versatility and convenience in scheduling and venue. Convenience and accessibility are, however, only beneficial if courses promote student learning effectively. (2) In democratizing education, online learning is lauded as an integral power. It is a means to open up schooling to communities with reduced access due to geography, status, or physical impairment (3)(4). The new generation is the first one to take for granted the presence of the Internet. The EU Kids Online Study estimates that kids aged 9-16 go online for an average of 88 minutes a day. Nevertheless, this generation's very optimistic labels such as mask the possible derogatory site for this rise in internet usage (5,6). We can still benefit from our observations even though we don't have the answers to these questions. For example, students would be well-advised not to take all of their classes online, but this may not be feasible for all of our students, especially those who live farther away or who have commitments that make earning a degree while attending classes on a campus impossible. Technological developments have contributed to the extension of teaching from conventional approaches to online instruction, such as online laboratories, which draw medical schools' interest because they tend to better fulfill institutional needs, also leading to the reduction or loss of in-person laboratories. These new developments in microbiology education affect the understanding of students of their academic experience, based on how they study (7,8).

Online technologies include social networks, web-based services, and message forums, and can be described as any service or networking platform accessible on or using the internet. In higher education, online tools have been an indispensable feature of students' and academics' lives, affecting learning strategies (9). Students in the health professions tend to use the internet regularly, participating in a variety of networking events centered mostly on social media sites. Because of the rapid evolution of web-based information systems, especially social media, many health professions students now use the internet as their primary source of information (10,11). The results show that when students take a larger proportion of their course load online, their success decreases. When it comes to tackling this pattern in higher education, colleges must pay careful attention to ways to boost the success of online students. In the aftermath of the COVID-19 pandemic, it's particularly important to consider the needs of online learners, the online classes also save time in our day-to-day life. Higher education is seeing an increase in online education, including creative and sensitive online course formats as well as studies on student opportunities to engage with online course material. (12). Similarly, we don't know why students who take all of their classes online are less likely to be retained, particularly because much of the research cited above suggests that students learn just as much in online courses as they do in face-to-face courses, including in political science, and that online instruction can provide students with valuable interaction opportunities there are also many other instant opportunities in online classes. Students who perform coursework remotely would find online classes enticing thanks to the widespread use of smartphones and web apps, furthering the idea of studying anywhere and anywhere. In 2014, the growth rate of online enrollment at community colleges was 4.7 percent, which was greater than the growth rate of the student population. The majority of higher education institutions see online learning as an important aspect of their long-term development strategy. In reality, online classes are becoming more popular as a means to extend learning opportunities and attract a broader audience (13,14)

This study aims to create awareness of online class exercises among third-year undergraduate dental students. There is lagging in the population of the people. This study shows the importance and some disadvantages of online classes. Our team has extensive knowledge and research experience that has translated into high quality publications (15).(16–29) , (30–34)

MATERIALS AND METHODS:

A descriptive cross-sectional study was conducted among the third-year Saveetha dental college randomly. To analyze their awareness and knowledge in on, one practical exercise. Approval was given from the Institutional review board. The survey was conducted among 100 people. A random sampling method was done. Self-administered questionnaires of 15 closed-ended questions were prepared and distributed among the participants online through "Google forms". The self-administrated questionnaire was prepared and explained well and distributed. The data were collected, compiled, arranged systematically, and analyzed in terms of frequencies using SPSS software and the Pearson chi-square test which was done in association with gender and the awareness and knowledge in online practical exercises among third-year undergraduate students. The confidence interval was found to be 95% and statistically significant at $p<0.05$. The results are then represented as pie charts and bar graphs.

RESULTS AND DISCUSSION:

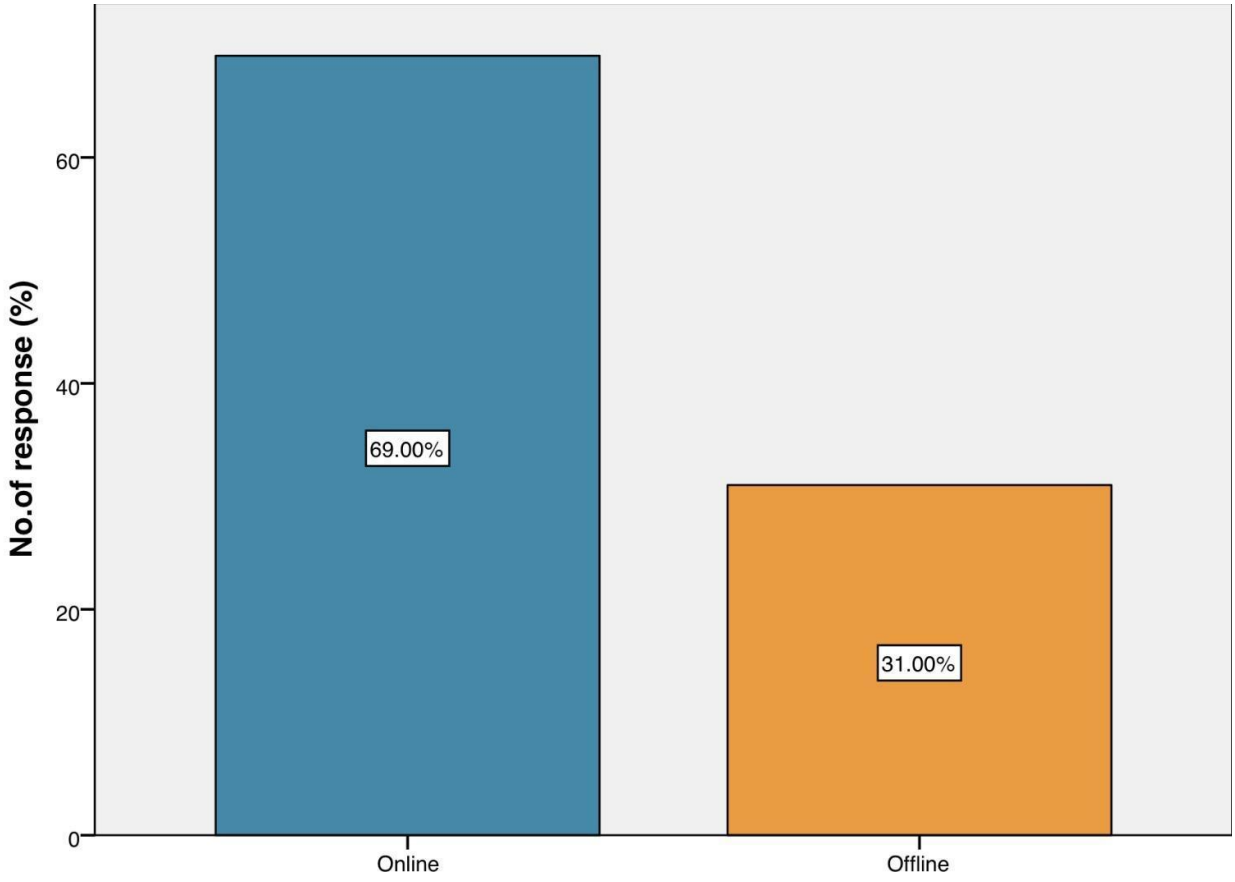

Figure 1: The bar graph represents the frequency distribution in awareness of classes they prefer, 69% (blue) choose online classes and 31%(orange) choose offline classes.

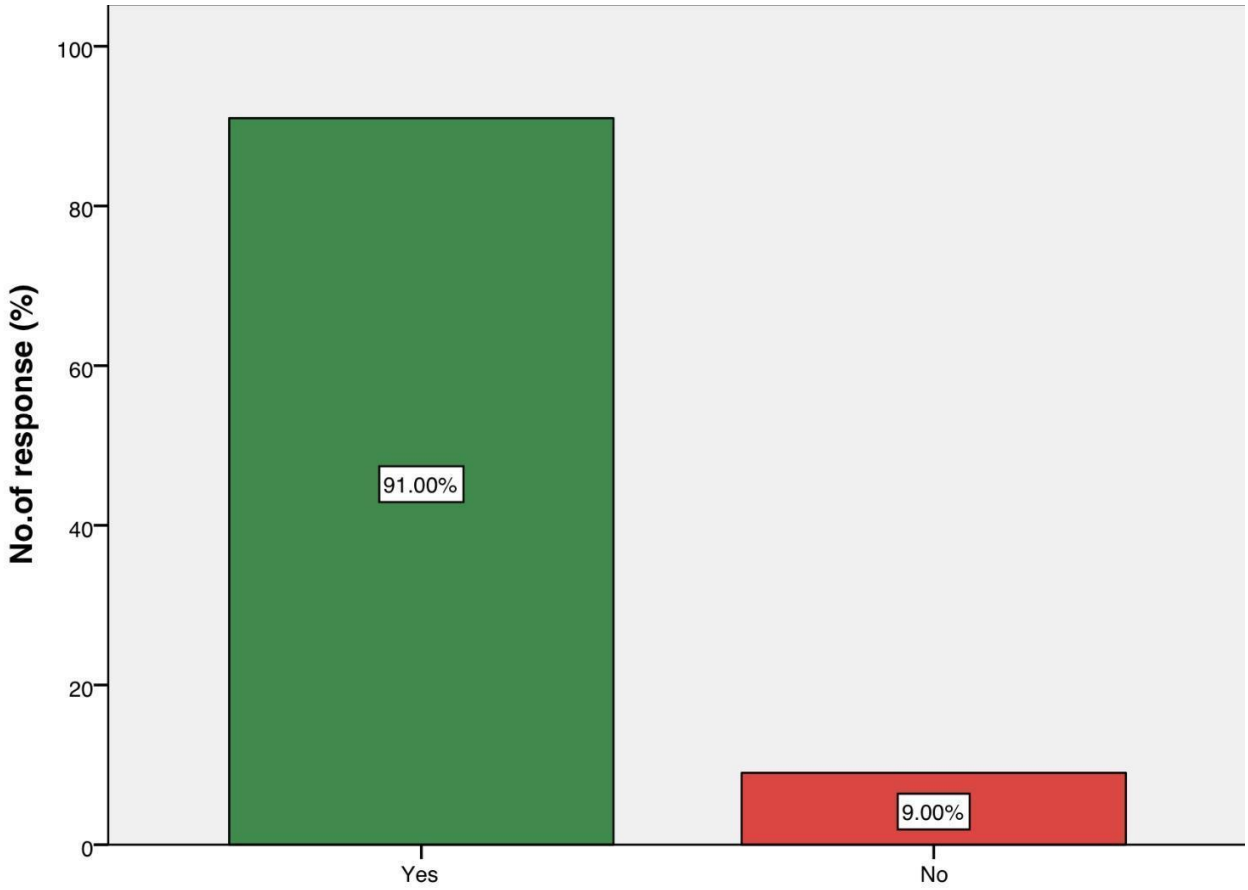

Figure 2: The bar graph represents the frequency distribution awareness to gain knowledge in online classes, 91% (green) can gain, 9%(red) are not able to gain knowledge.

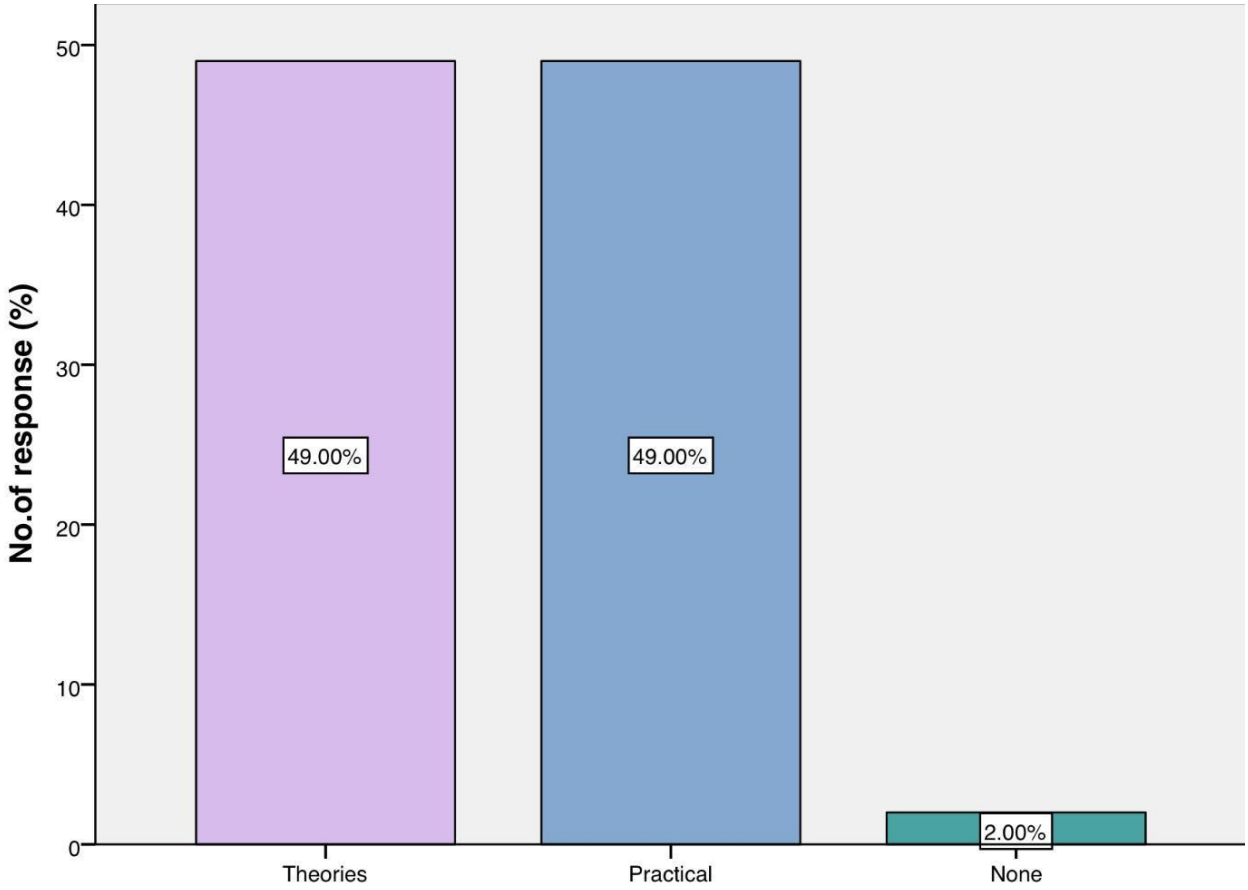

Figure 3: The bar graph represents the frequency distribution most preferable in practical classes, 49% (purple) prefer theories,49%(blue) prefer practicals, 2%(green) do not prefer both.

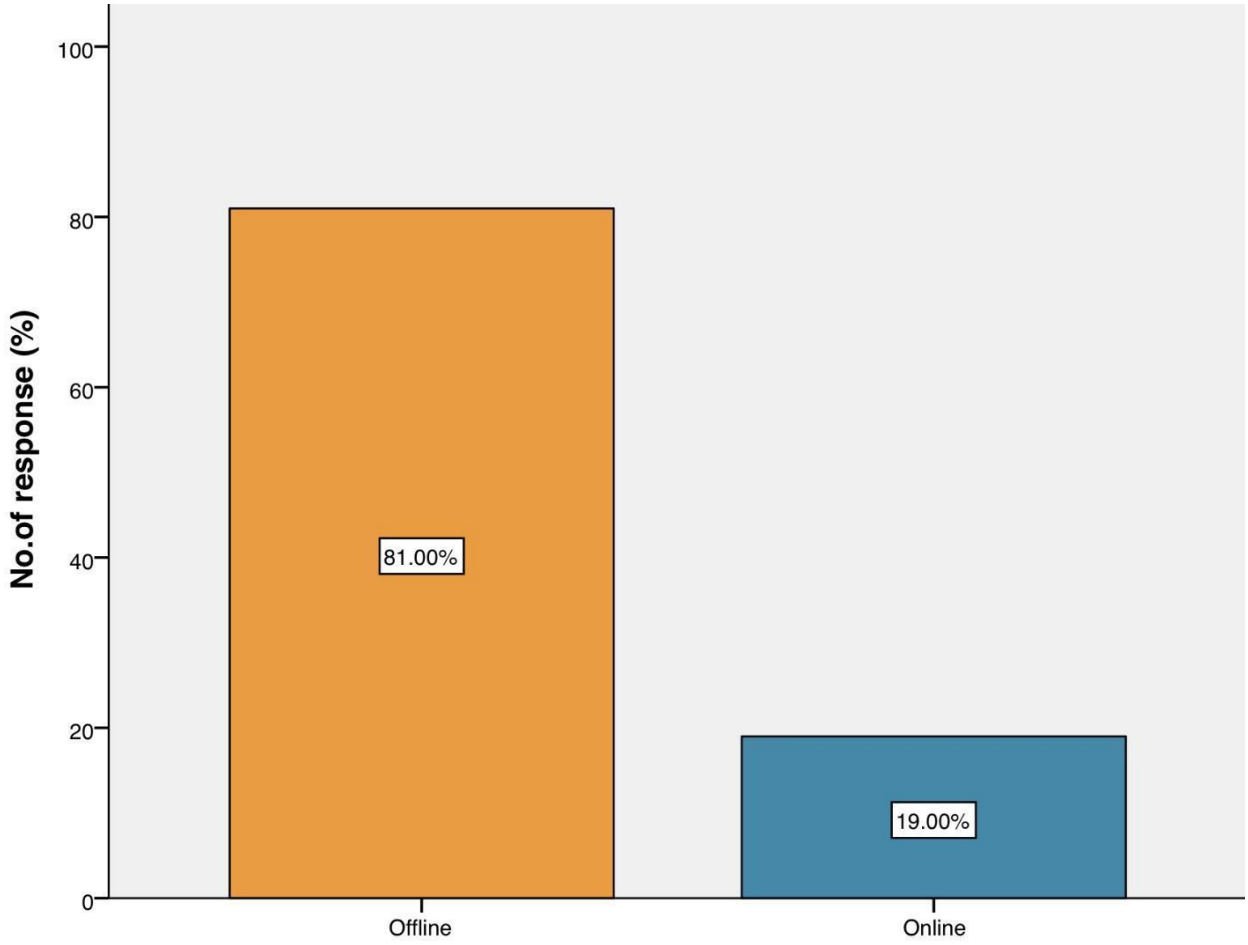

Figure 4: The bar graph represents the frequency distribution work overloaded classes, 81% (orange) prefer offline, 19%(blue) prefer online.

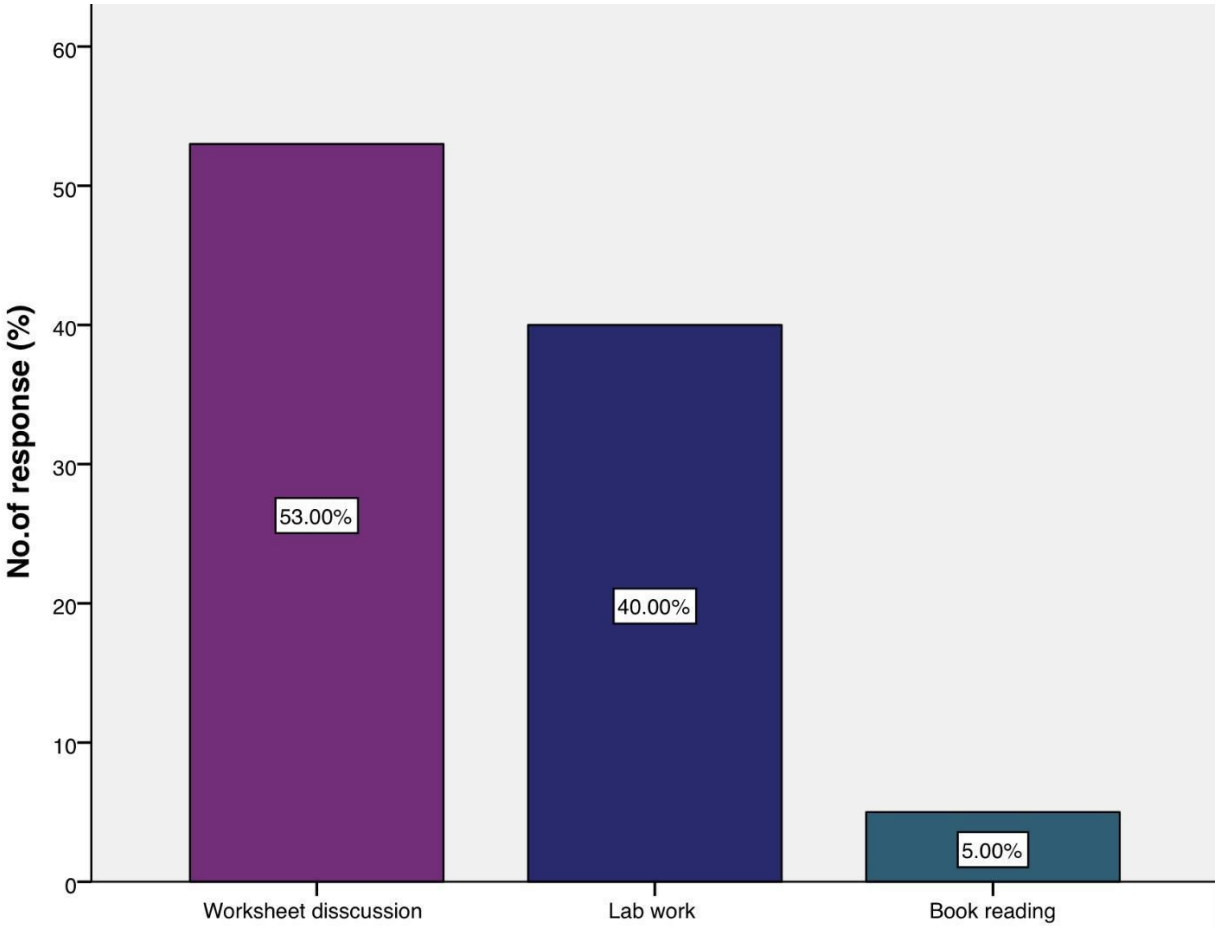

Figure 5: The bar graph represents the frequency distribution, students preference, 53% (violet) prefer worksheet discussion, 40% (dark blue) prefer lab work, 5% (dark green) prefer book reading.

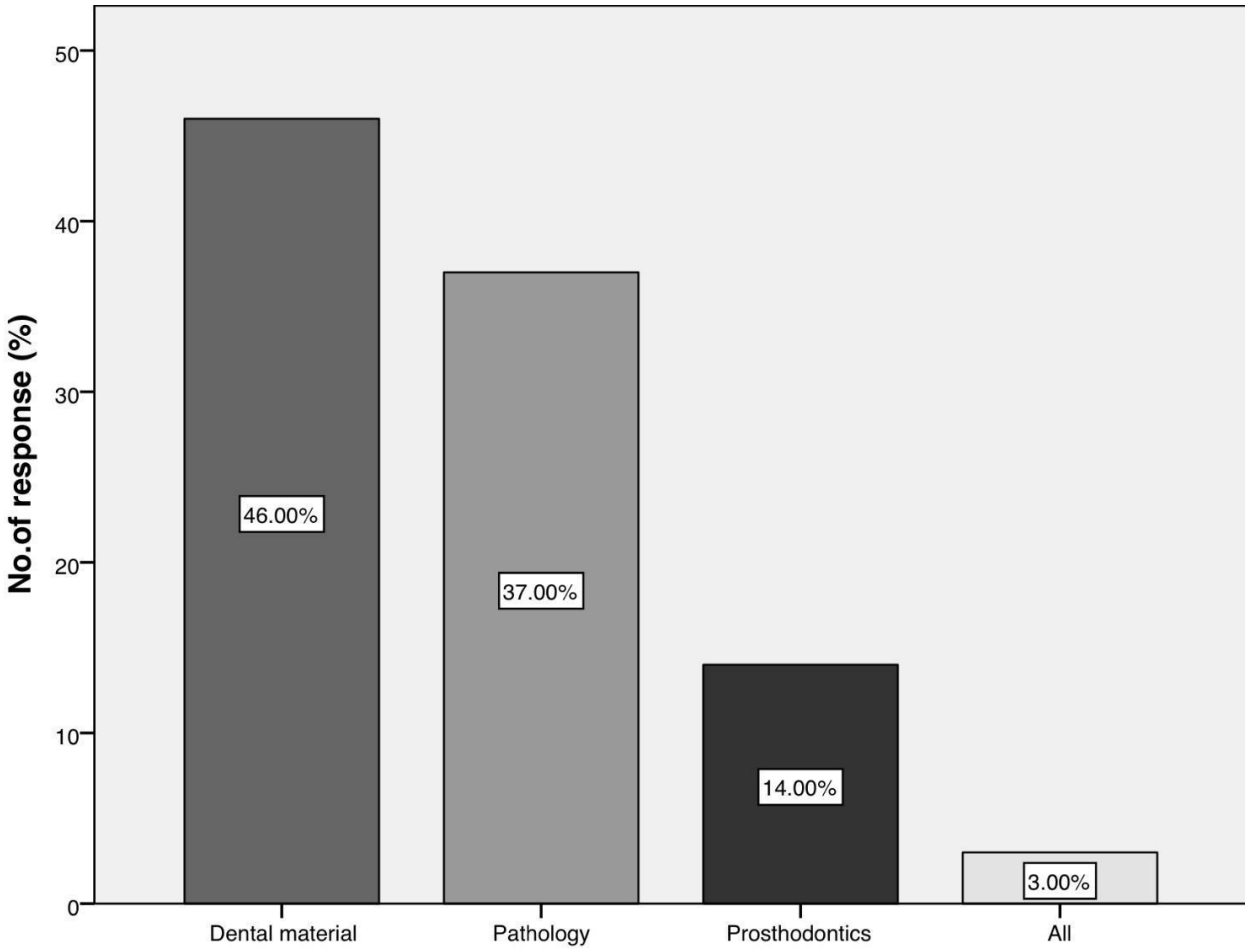

Figure 6:The bar graph represents the frequency distribution awareness in the hardest subject to learn in online classes, 46%(dark grey) chose dental materials,37%(grey)chose pathology, 14%(black) chose prosthodontics,3%(lightest grey) chose all.

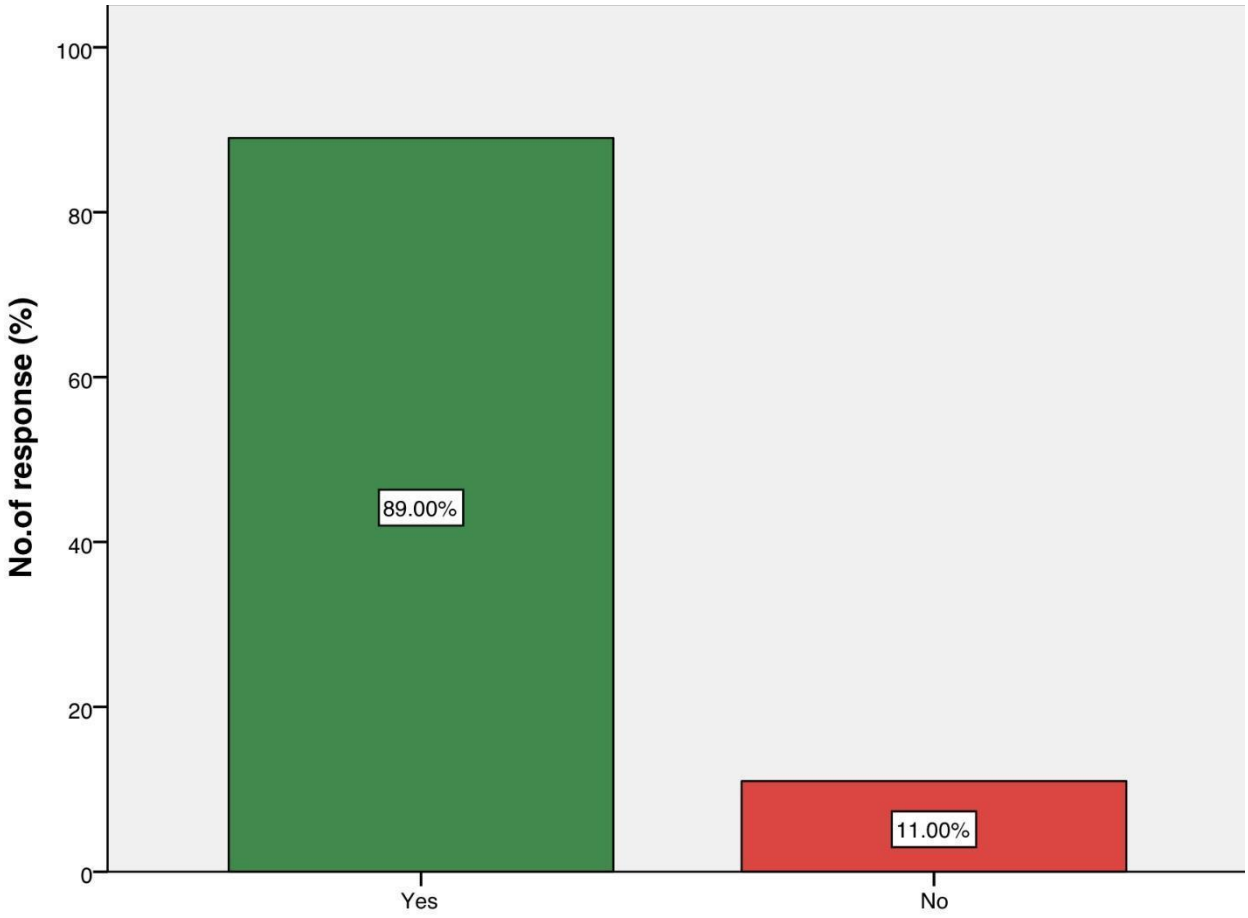

Figure 7:The bar graph represents the frequency distribution of whether subjects like prosthodontics are comfortable to attend online or not, 89%(green) prefer are comfortable, 11% (red)are not comfortable.

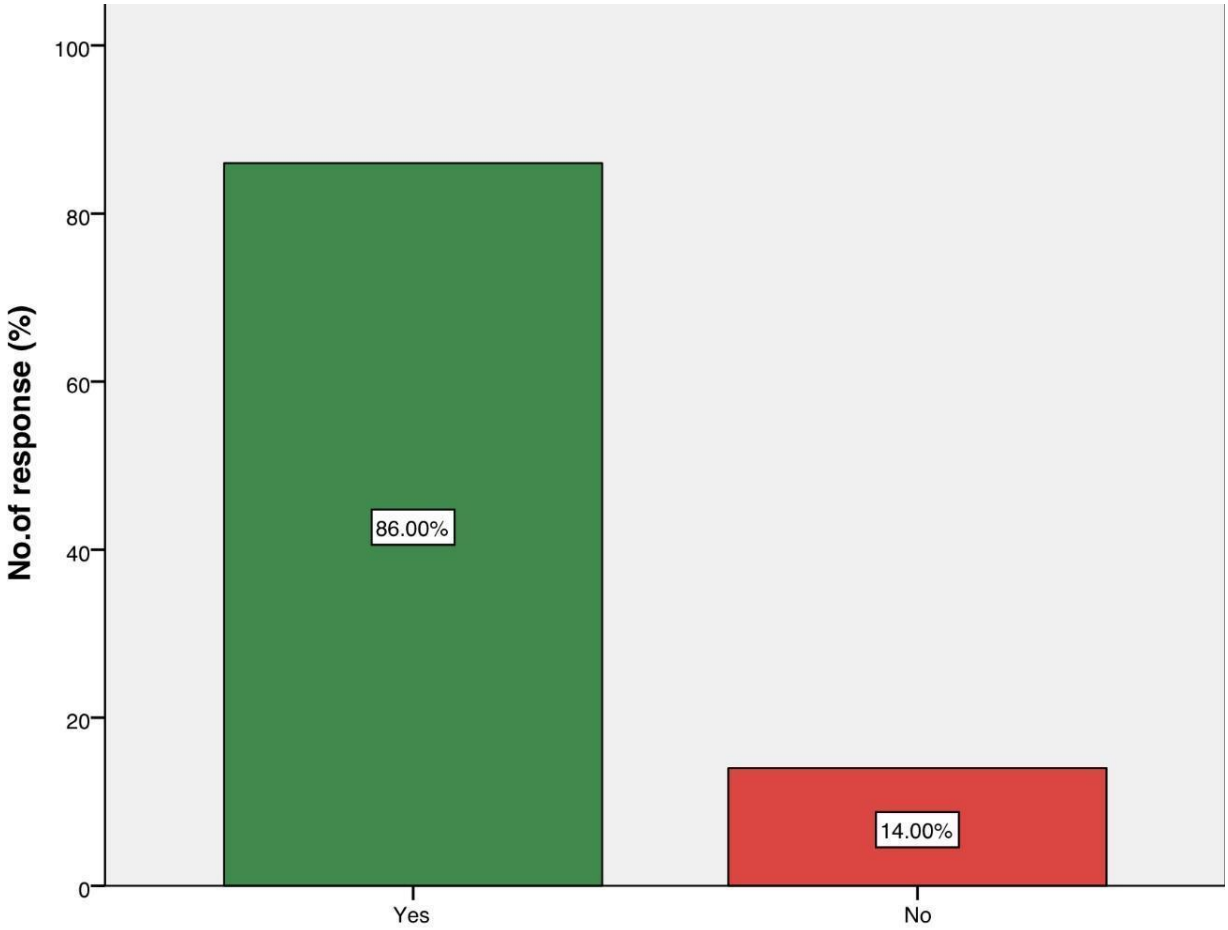

Figure 8:The bar graph represents the frequency distribution comfortableness in attending online classes, 86%(green) responded yes, 14%(red) responded no.

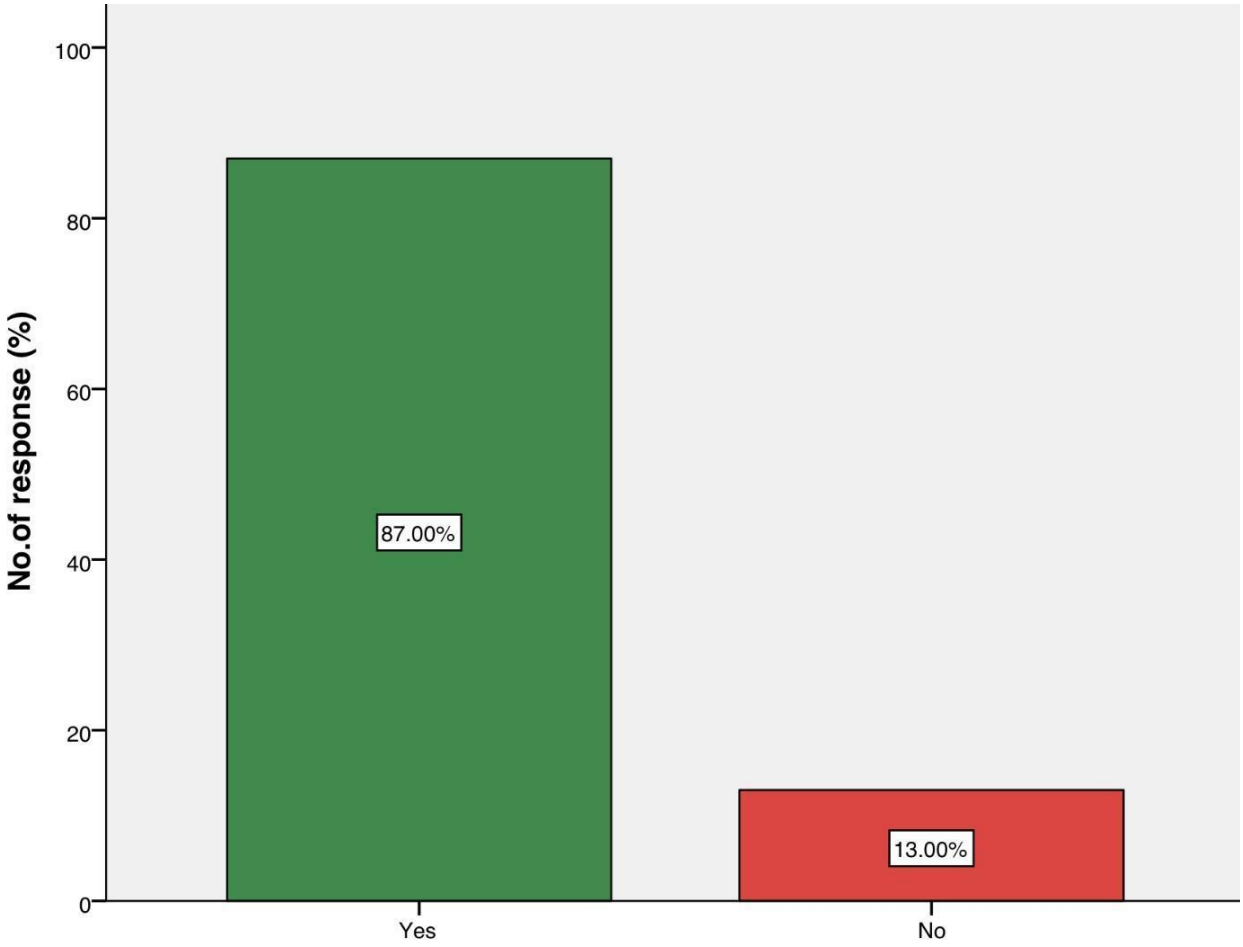

Figure 9: The bar graph represents the frequency distribution of scoring good marks in online classes, 87%(green) responded yes, 13%(red)responded no.

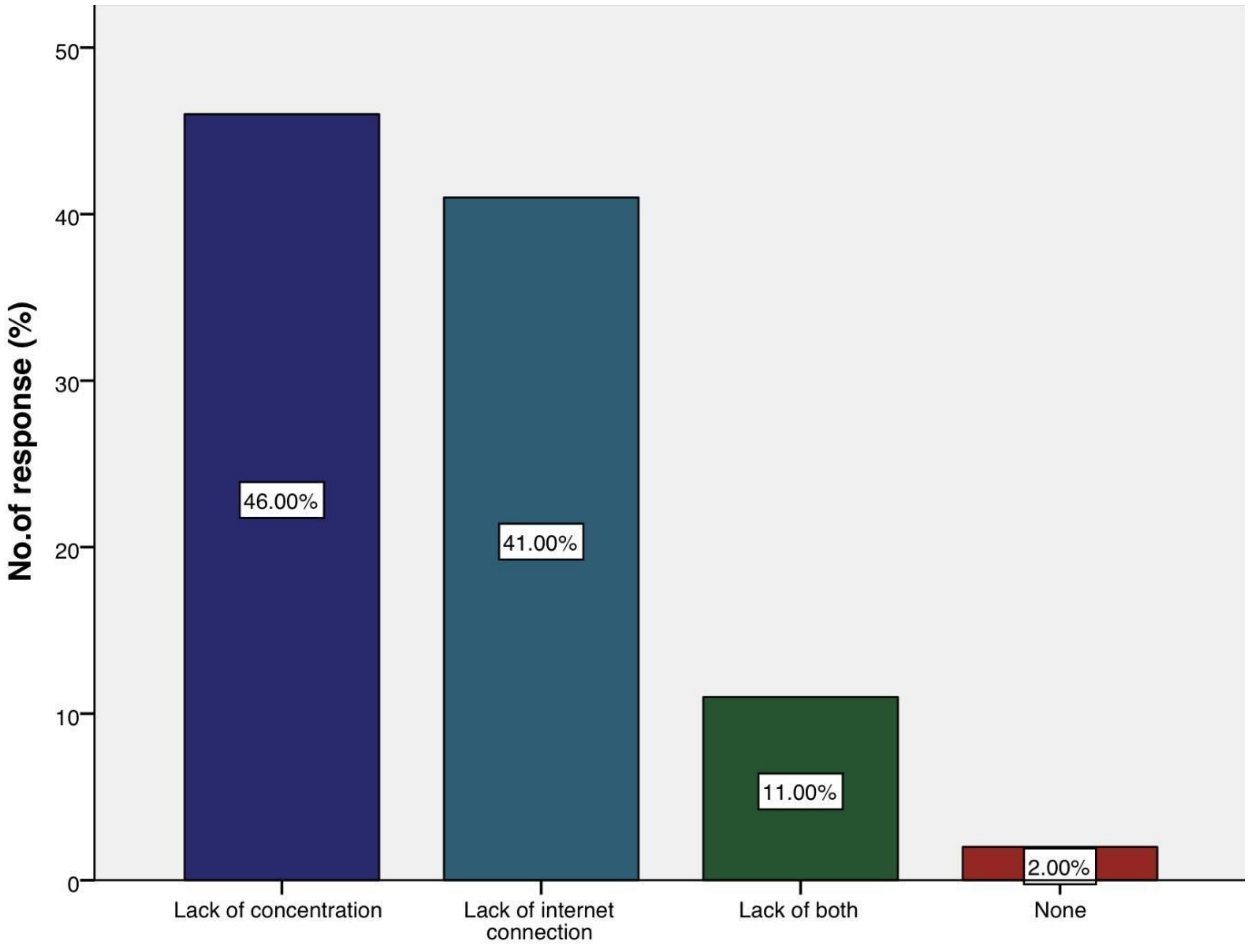

Figure 10:The bar graph represents the frequency distribution disadvantages facing during online classes, 46%(dark blue) responded as lack of concentration, 41%(blue) responded lack of internet, 11%(green) responded as lack of both, 2% (red)responded as none.

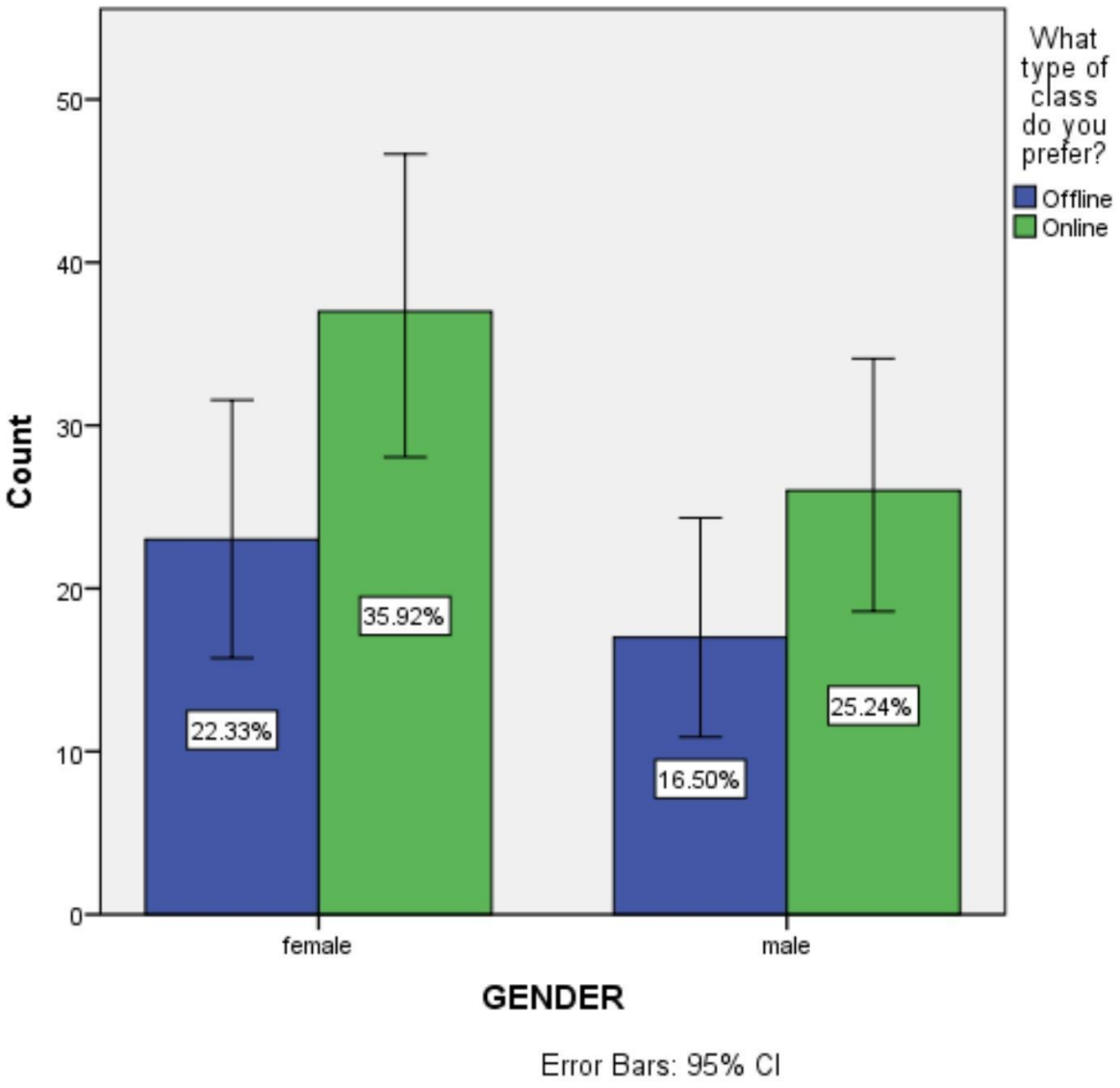

Figure 11: This graph represents the association between gender and the awareness of students of online classes, The x-axis represents the gender, and the y-axis represents the number of participants, Where blue represents that students prefer online classes, and the green represents that students prefer online classes. Association between gender and awareness and knowledge of online practical classes was done using chi-square test $p=0.71, p>0.05$ which is found to be statistically not significant. In females majority of them are aware and knowledgeable of online practical classes than the male.

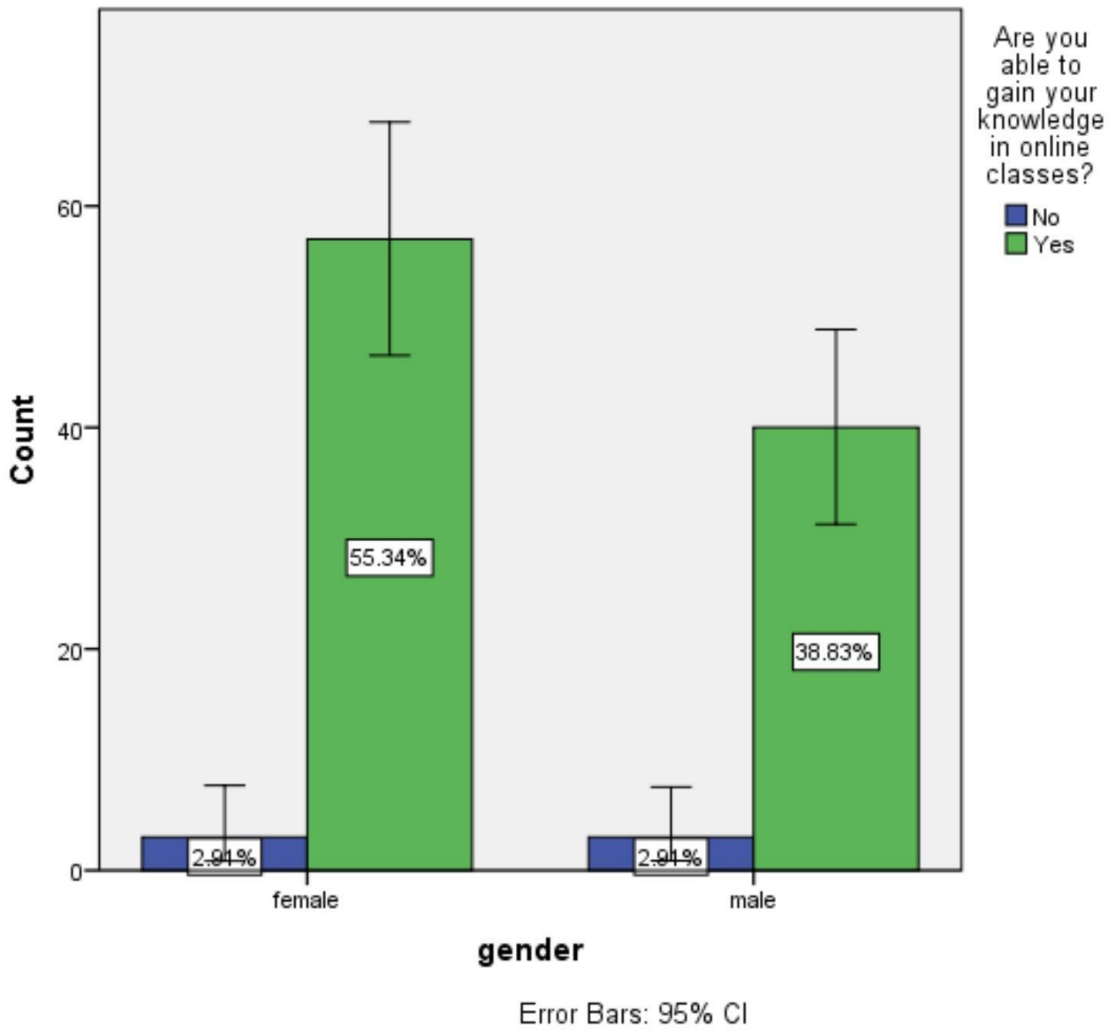

Figure 12: This graph represents the association between gender and the knowledge about online practical classes, The x-axis represents the gender and the y-axis represents the number of participants, Where blue represents that students are not able to gain knowledge in classes, and the green represents that students can gain knowledge. Association between gender and awareness and knowledge of online practical classes was done using chi-square test $p=0.62$, $p>0.05$ which is found to be statistically not significant. In females majority of them can gain knowledge online practical classes than the male.

Responses were collected and the data was analyzed. The majority of the third-year population know online practical exercises most of them were aware of the practical exercises while some of them were not aware of the preventional strategy.

It is concluded that types of classes students prefer, 69% prefer online classes, and 31% prefer offline classes. (Figure 1) gaining of knowledge in online classes 91% can gain knowledge, 9% are not able to gain knowledge (Figure 2). Preference in online classes 49% preferred theories, 49% preferred practical classes, 2% prefer none (Figure 3).81% responded that work is overloaded in offline classes, 19% responded that work is overloaded in online classes. (Figure 4) In Preferences 53% responded as worksheet discussion, 40% responded as lab works, 5% responded as book reading (Figure 5). Which subject is hard to attend during online classes, 46% responded as dental materials, 37% responded as pathology, 14% responded as prosthodontics, 3% responded as all (Figure 6). The subjects like prosthodontics are comfortable for 89% of students, 11% are not comfortable (Figure 7). Comfortableness of attending clinic classes online,86% responded as yes,14% responded as no (Figure 8).87% responded that they are good at scoring in online classes, 13% are not comfortable (Figure 9). Disadvantages faced during online classes 46% responded as lack of concentration, 41% responded as lack of internet connection, 11% responded as lack of both, 2% responded as none (figure 10).

The main disadvantages of online practical classes is that prolonged online courses can cause eye problems and social media distraction. A person's social isolation is caused by a lack of outdoor recreation, community projects, and communication skills. Our students have indicated that while online classes lasted more than an hour, 79 percent of them lost interest due to internet access problems comparatively there is much chance of lacking interest and information. (35). According to 80 percent of our pupils, sedentary life with less physical play and project work was a significant downside to online courses because of less physical activity the students were becoming very lazy and also lack interest in whatever stuffs they do.(5,36)When attending lengthy online classes, 75% of students complained of eye-related problems such as eye pressure, epiphora, and headache. Other important stumbling blocks include student engagement and social well-being (37). These may be solved by using simulation-based training apps, creating a swift and secure internet network, pre-training teachers on how to use this technology,

time flexibility, and shorter class periods, when students get used to online they are not able to attend online classes. (38)Visual whiteboards, videos on clinical exams, 3D photographs, surgical videos if appropriate, weekly one-on-one student-teacher therapy sessions, and daily reviews from students can all assist in overcoming obstacles and the popularity of online courses.(36)The findings of community college multi-section comparisons do not reliably address the question of whether online biology courses can be successful(12). It's worth noting that none of the research looked at the nature of either the face-to-face or online classes, such as whether they used evidence-based best practices including constructive learning methods or exercises to facilitate student-student and student-instructor engagement (39). Many of the studies involved undergraduate biology classes that were conducted entirely online, with 80 percent to 100 percent of the material accessed through the Internet. Studies that had a positive effect on learning outcomes had effects that were in line with or better than conventional, on-campus comparative classes (39,40)

For both the teacher and the pupil, online and combined classes offer more flexibility and versatility in terms of scheduling and venue. Convenience and usability, on the other hand, are only useful if courses help students learn more efficiently (41). Several meta-analyses have looked at this, with the majority of them concluding that well-designed online courses do help students learn. (42) Students did "modestly better, on average than those learning the same content by conventional, face-to-face teaching" in 43 of 50 surveys of online classes, according to the US Department of Education, but the findings "do not show that online learning is superior as a tool (43). The observed learning benefits were the result of a mixture of factors in the care environments (which were likely to require more learning time and materials, as well as more opportunities for collaboration)" (emphasis in original). The majority of distance education is now delivered over the Internet, and millions of students benefit from it each year. In 2014, for example, over 5.8 million students enrolled in online classrooms, with more than half of them taking both online and on-campus courses.(36).

Limitation of the study is done only among the third year students, other years were not involved, the number of articles is cited in a limited way, and vast information about other year's subjects is not included. Future studies can be done to overcome these limitations.

CONCLUSION:

It is concluded that most of the third-year undergraduate students are aware of online practical exercises and they also have knowledge about online classes.

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