

Type of Study: Original Research

Evaluation of the Knowledge Attitude and Practice of Management Skills in Laboratory Set Up among Undergraduate Dental Students

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Abstract

Managers in healthcare have a legal and moral obligation to ensure high-quality of patient care. Management skills can help in influencing the quality and safety of clinical outcomes, processes and performance. The aim of the study is to analyse the knowledge among undergraduate dental students about the managerial skills in setting up a laboratory so as to assure quality. A cross-sectional observation study was conducted among undergraduate dental students. A total of 105 participants were included in the study. The study was conducted online. The data collected were tabulated and analysed. The results showed that 87.6% agreed that management skills help in the progress of the lab and 77.1% were aware of human resource management. In our study, 91.4% agreed that high-quality laboratories have better management practises and 88.6% agreed that leadership is a major management skill. In our study we found that the undergraduate students have less knowledge and awareness about management skills. This void can be filled by including management skills and laboratory set up as a part of the curriculum.

Keywords: *management skills; undergraduate dental students; clinic; laboratory; Human resource management*

Introduction

India has a dual healthcare system comprising the private sector which is the major source of healthcare in India and the public sector which is funded by the government. Access to public health care is regardless of socio economic status whereas the private sector caters more to the Urban population. According to a National Family Health Survey, 70% of private medical sectors are urban ¹. In India one of the key constraints

for achieving optimal health outcomes are due to lack of health management schemes, leadership capacity and absence of a solid structured policy framework to develop the same. Physicians have to combine their management and leadership skills to meet the challenges scenarios².

Human Resource Management (HRM) guarantees the effective use of knowledge, competence, individual abilities and other characteristics possessed by individuals aimed towards the achievement of an organization's goal. Effective leadership of the clinician in healthcare organisations are linked directly to superior patient care outcomes³. Most physicians are ill prepared to undertake responsibilities requiring organisational and management skills. This is because the medical schools and residency training facilities fail to teach them this much required skill⁴. The American College of Preventive Medicine has put forward 4 managerial competencies that are mandatory for a clinician in order

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to provide good healthcare. The competencies are the ability to manage finance, ability to manage elements of the organisation and an in depth knowledge of the legal aspects^{5,6}.

There is a low consensus on the basic competencies and skills required for a healthcare manager with no additional academic improvement and professional development to perform their managerial function in a healthcare set up⁷. There is limited literature on the competencies of a manager and the literature is partial in providing a mutual agreement with the role⁸. This study aims to analyse the knowledge and awareness among the undergraduate dental students about the managerial skills required to set up a laboratory in order to ensure quality.

Materials and Methods

A cross sectional observational study was conducted among the undergraduate dental students. The survey was carried in a university setting, this made the study economical, easy to create with wide reach, easy to gather large data and helped in quick interpretation. The study was approved by the scientific review board of the institution. The study comprises a self administered questionnaire which was circulated using google forms among the dental students. 18 questions were included in the questionnaire. The questionnaire was divided into three parts which included questions pertaining to knowledge on management skills and HRM, six questions on attitude towards managerial skills and the rest of the questions on its benefits in dentistry. The study was conducted among 105 undergraduate dental students. All the data were collected using Google forms, uploaded in Microsoft Excel and analysed using SPSS software. Percentage analysis was done and Chi square test was done to compare the level of awareness between the various years of study. pie charts and bar graphs were used to depict the results.

Results and Discussion

Management focuses on how to do work and the manager alliance process so that work is consistent and efficient⁹. Leadership focuses on what to do and why, where leaders articulate a vision and inspire people to work well together to do complex, innovative work¹⁰. In both the roles, leaders and managers influence people

and work processes to achieve shared objectives⁹. The distinction between the leadership and management role is less important than achieving the right balance and enacting leadership behaviours and management structures that support efficiency and process reliable human relations, innovation and adaptability¹⁰.

Our study revealed that out of 105 participants 66.7% were females and 33.3% were male. It was observed that 13.3% belonged to first year, 12.4% belonged to second year, 41.9% belonged to third year, 12.4% belonged to final year and 20% belonged to internship.

Human Resource Management [HRM] is the system that guarantees an effective use of knowledge, competence, ability and other characteristics possessed by individuals aimed for the achievement of an organisation's goals. After the industrial period, productivity is increasingly based on the knowledge, skills and activities of the trained human intellect¹¹. In the present study, 87.6% of the participants were aware that management skills help in the progress of the laboratory and 77.1% were aware of HRM. On comparing between the groups, there is significantly increased awareness regarding managerial skills among 1st years and interns when compared to the other years of study (Figure1). On assessing awareness regarding HRM , most of the participants were aware . On evaluating their awareness on the various factors which enable HRM to achieve the organisational goal, 27.6% agreed on knowledge , 17.1% on competence, 5.7% on ability, 2.9% with other characteristics and 49.7% with all the above factors. The opinion was varied among the participants . On evaluating the awareness regarding the important managerial skills required for a manager to manage a laboratory 49.5% agreed on leadership, 21.9% for planning, 24.8% for organization and 3.8% for controlling. On comparing between the groups, no statistical significance was seen (Figure 2). On the other hand only 44.8% agreed that professional relationships, training employees, seeking opinion from other managers to plan and prioritise orders will be useful in developing a better manager to manage time, and on comparing the association of year of study and skills possessed for better management of laboratory, the Pearson Chi Square test shows $p=0.193$ which is not statistically significant (figure 3).

High-quality hospitals are more likely to have better management processes related to operations, monitoring, target setting and human resource than low quality hospitals. Management schools were significantly higher in hospitals with boards that pay greater attention to quality and were more likely to adopt effective practices related to the use of data or clinical quality metrics (Ileri et al. 2017). In our study we observed that 91.4% of the participants agree that high-quality laboratories have better management processes than the low quality ones. On comparing between the various years of study, good awareness was seen among all the years of study, but statistical significance was not found (Figure 4).

In a systematic review by Parand et al where they have compared the managerial time spent on quality and safety, managerial quality and safety activities. In that study, manager's time spent and work can influence quality and safety clinical outcomes, processes and performance.¹² In our study we found that most of the participants agreed that leadership and management influence the delivery of high-quality care. In our study 25.7% accepted leadership, 21.9% accepted management, 52.4 % agreed both leadership and management influences delivery quality of high-quality care and on comparing the association of year of study and the factors that influence the delivery of high quality care, the Pearson Chi Square test shows $p=0.034$ which is statistically significant (Figure 5). In our study we observed that the participants 17.1% agreed leadership, 25.7% agreed communication, 5.7% agreed managing budgets, 2.9% agreed managing budgets and 48.6% agreed all the factors to be the essential management skills in a laboratory.

The various activities in the laboratory are diagnosis, research, teaching¹³⁻²⁰. The various diagnostic methods are histopathological testing, microbiological analysis test, immunohistochemical analysis, genetic analysis, radiographic analysis²¹⁻²⁷. In our study we observed that opinion among the participants regarding the major activities of clinical laboratories are administration (26.7%), patient care (15.2%), research (3.8%) and combination of administration, patient care service, research and teaching (51.4%) .

87.6% agreed that managerial skills can make work simple and easy and 72.4% agreed that only entrepreneurs should have managerial skills. 76.2% of the participants agreed that holding a MBA degree prior to setting up a clinic or laboratory can help in easy management of clinical laboratory and 86.7% agreed that an expert in management can help in the development of laboratory or clinic. This shows the students are well aware of the importance of acquiring managerial and leadership skills in order to implement good healthcare.

The issues involving professional identity, lack of role awareness within the organisation, can entail poor communication with other group members²⁸. In our study, 88.6% agreed that leadership is ruling and getting work done without their involvement. But on the contrary a good leader is one with proper communication, identity and awareness which can help in the progress of the organisation and thereby lead people by example and not by force.

The limitation of the study is uneven distribution of sample size, experience in clinic or laboratory were not mentioned. In future, better training and proper knowledge during training in the curriculum can help in the successful set up of laboratories or clinics.

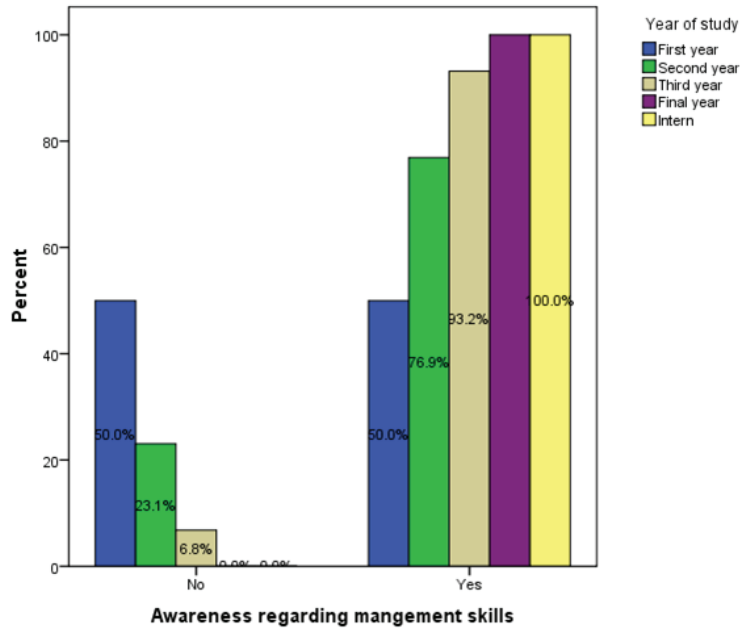


Figure 1: Bar graph showing the association of awareness regarding management skills and the year of study. X axis represents the awareness on management skills and Y axis represents the percentage of responses. The interns and first year students were found to have 100% awareness regarding managerial skills. Chi square test (Chi square value = 25.694), showed statistical significance with $p=0.000$ ($P<0.05$). There is significantly increased awareness regarding managerial skills among 1st years and interns when compared to the other years of study.

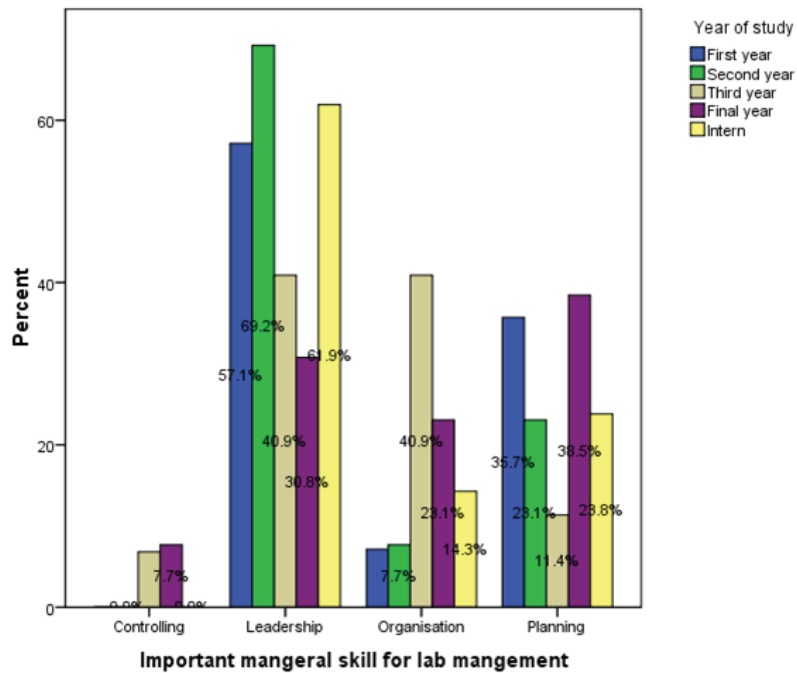


Figure 2: Bar graph showing the association of awareness regarding important managerial skills and the year of study. X axis represents the management skills and Y axis represents the percentage of responses. Most of the students agreed that leadership was the most important skill. Maximum response of 69.2% was given by the second year students. Chi square test (Chi square value = 20.789), showed statistical significance with $p=0.054$ ($P>0.05$). Increased awareness regarding managerial skills among the 2nd year students.

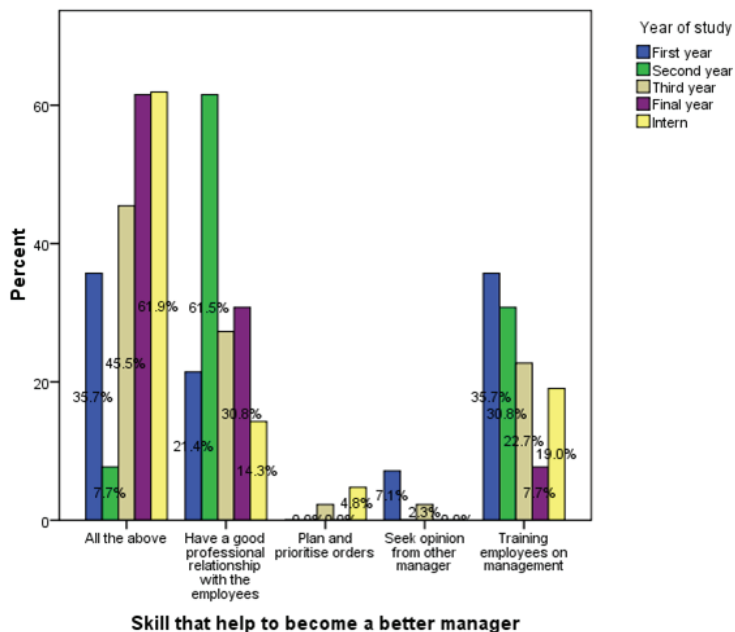


Figure 3: Bar graph showing association between skills that help to become a better manager and the year of study. X axis depicts the management skills that help to become a better manager and Y axis depicts the percentage of responses. Most of the students agreed that all the above skills are important. Maximum response of 61.9% was given by the interns. Chi square test (Chi square value = 20.789), did not show statistical significance with $p=0.193$ ($P>0.05$). Increased awareness regarding skills that make a better manager among the Interns.

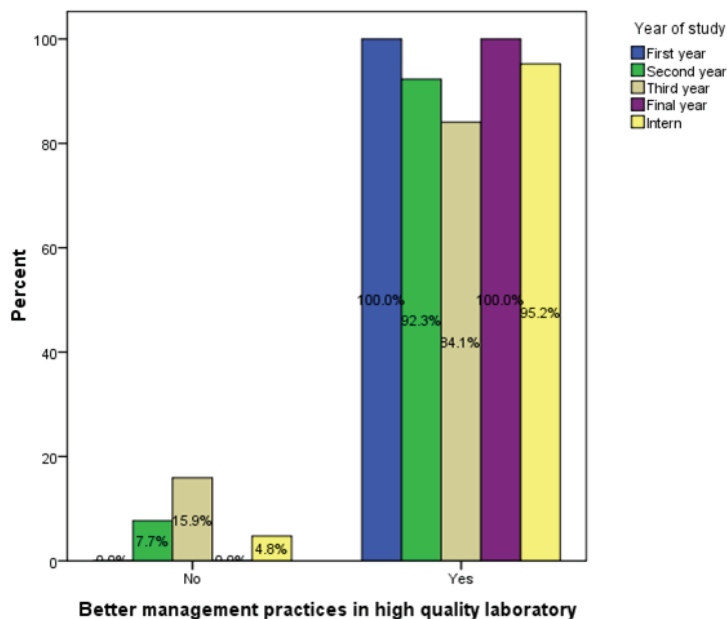


Figure 4: Bar graph showing the association of year of study to the question, "Do high quality laboratories have better management practices than low quality ones?". X axis represents the response yes and no and Y axis represents the percentage of responses . Most of the students agreed that there are management practices in high quality laboratories. Maximum response of 100% was given by the first and final years. Chi square test (Chi square value =5.956), did not show statistical significance with $p=0.202$ ($P>0.05$). Good awareness among all the years regarding better management practices in high quality laboratories.

Figure 13: Pie chart showing the response for the question ,”What are the factors that influence the delivery of high quality care” where blue represents leadership ,green represents management and brown represents both leadership and management to the factors that influence the delivery of high quality care.

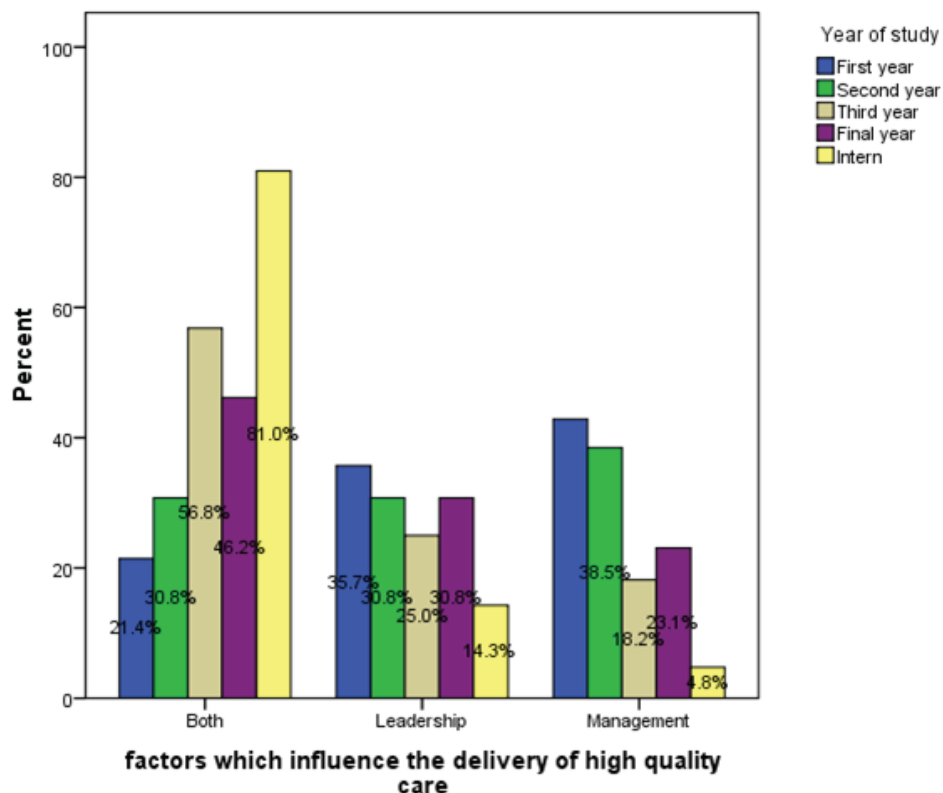


Figure 5: Bar graph showing association of the year of study and the factors that influence the delivery of high quality care. X axis depicts the factors that influence the delivery of high quality care and Y axis depicts the percentage of responses. Most of the students agreed on both leadership and management. Maximum response of 81% was given by the interns. Chi square test (Chi square value =16.669), showed statistical significance with $p=0.034$ ($P<0.05$). Significant increase in awareness regarding factors which influence the delivery of high quality care was seen among the interns.

Conclusion

In our study we found that undergraduate dental students are having less knowledge and awareness about management skills. Although students are aware that there is a need for leadership and managerial skills, there is still a lacunae in understanding its practical aspects. This void can be filled by including management skills and laboratory set up as a part of curriculum in order to equip the student to set up a smooth functioning laboratory and clinic in the future.

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