Knowledge and Utilization of Orthodontic Application and Social Networks by Orthodontists in Dakshina Kannada: A Survey Study

Dr. Sharath Kumar Shetty B.[1]; Dr. Brigit Alphonsa Gervasis[2];
Dr. T B Binshad Mohammed[3]

[1]Professor and HOD, [2]Reader, [3]Post Graduate

[1, 2, 3] Department of Orthodontics, KVG Dental College & Hospital, Sullia

Abstract:

➢ *Objective*
To evaluate the knowledge, usage, benefits, and challenges of orthodontic applications and social media networks among dental professionals in Dakshina Kannada.

➢ *Methods*
A structured questionnaire was distributed among dental professionals including postgraduate students, academicians, and private practitioners. The survey included questions on demographics, knowledge and usage of orthodontic applications and social media networks, perceived benefits and challenges, and interest in further training. Descriptive statistics were used for analysis.

➢ *Results*
A total of 50 respondents participated. Social media networks were used for orthodontic purposes by 83.7%, mainly for learning from experts (59.2%). Instagram (77.6%) and YouTube (55.1%) were the most utilized platforms. While 60% were aware of orthodontic applications, only 38% actively used them. Major benefits cited included faster treatment planning (28.6%) and improved communication (18.4%), with cost (46.9%) and privacy concerns (18.4%) as primary barriers. Notably, 91.8% believed digital tools will be essential in the future, and 80% expressed interest in training.

➢ *Conclusion*
There is considerable awareness and interest in orthodontic applications and social media networks networks among dental professionals in Dakshina Kannada. Efforts should focus on improving access to validated tools and offering structured training to overcome existing barriers.

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I. INTRODUCTION

Digital innovations are transforming the field of dentistry, with orthodontics being particularly receptive to mobile applications and social media networks platforms. These tools are used for patient education, treatment monitoring, communication, and professional development. Globally, studies have shown varying levels of adoption depending on region, technological access, and professional familiarity.

In the UK, Prithiviraj et al. (2023) reported modest usage of orthodontic mobile applications (20%) among clinicians, but also noted overwhelming willingness (96%) to adopt evidence-based tools for patient care. In India, regional variations in digital literacy and infrastructure may influence adoption patterns. Dakshina Kannada, a hub for medical and dental education in Karnataka, offers a relevant setting to explore these trends.

This study aims to evaluate the knowledge and utilization of orthodontic mobile applications and social media networks among dental professionals in Dakshina Kannada and to understand their perceived benefits, challenges, and interest in further training.

➢ *Materials and Method*

• *Study Design*
    A survey using a cross-sectional questionnaire was carried out.

• *Participants*
    The study population included postgraduate students in orthodontics, faculty members, and practicing dental professionals in Dakshina Kannada.

• *Survey Instrument*
    The questionnaire included sections on:

    ✓ Demographics (clinical experience, practice setting)

    ✓ Knowledge and use of orthodontic mobile applications

    ✓ Use of social media networks for orthodontic purposes

    ✓ Perceived benefits and challenges

    ✓ Willingness to attend training/workshops

➢ *Data Collection*
    The questionnaire was disseminated digitally via email and messaging platforms over a one-month period. Participation was voluntary, and informed consent was implied through submission.

➢ *Ethical Considerations*
    Anonymity and confidentiality were maintained throughout. Ethical clearance was obtained from the institutional review board.

➢ *Statistical Analysis*
    Responses were compiled and analyzed using Microsoft Excel. Descriptive statistics (frequencies and percentages) were used to represent the data graphically and in tabular form. No inferential statistics were applied due to the exploratory nature of the study and sample size.
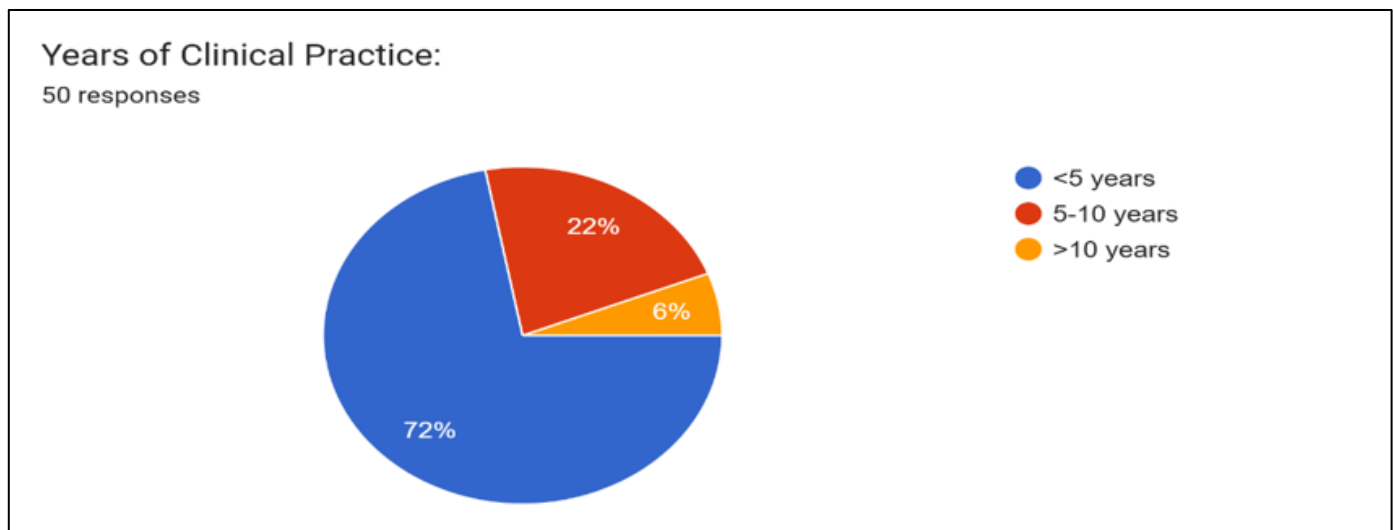

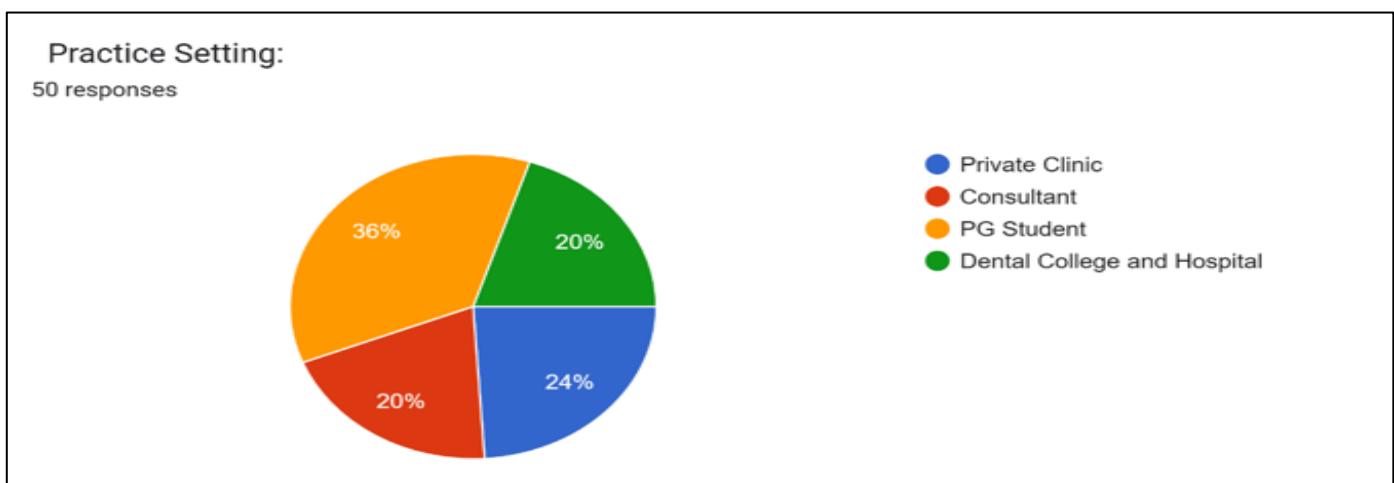Fig 1 Question No.1 Years of Clinical Practice

Fig 2 Question No.2 Practice Setting

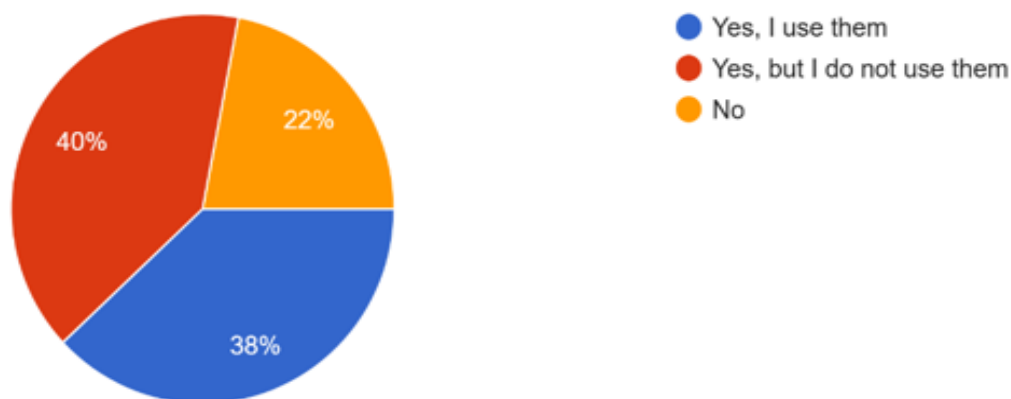Fig 3 Question No.3 Are You Aware of Orthodontic Applications?

Fig 4 Question No.4 Which Orthodontic Applications Do You Use Most Frequently?
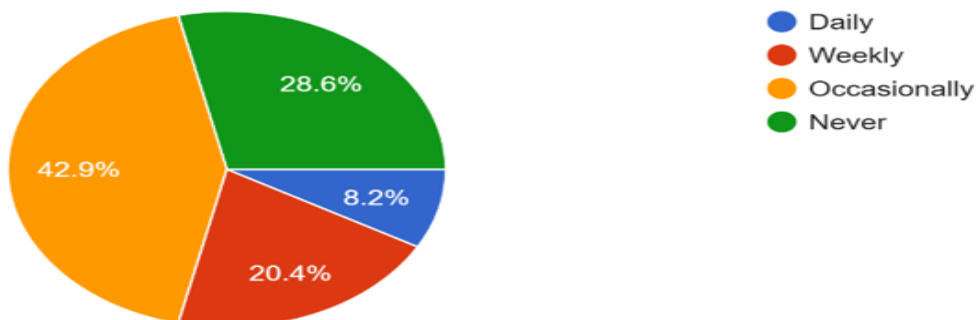

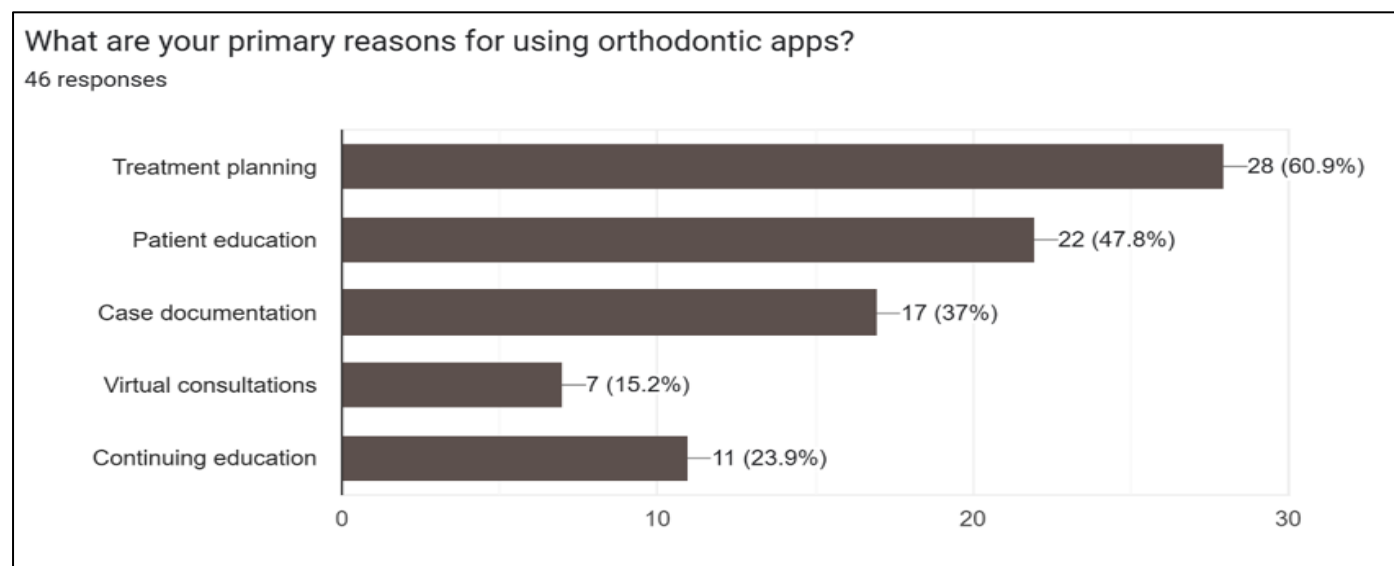Fig 5 Question No.5 How Often Do You Use Orthodontic Applications?

Fig 6 Question No.6 What Are Your Primary Reasons For Using Orthodontic Applications?
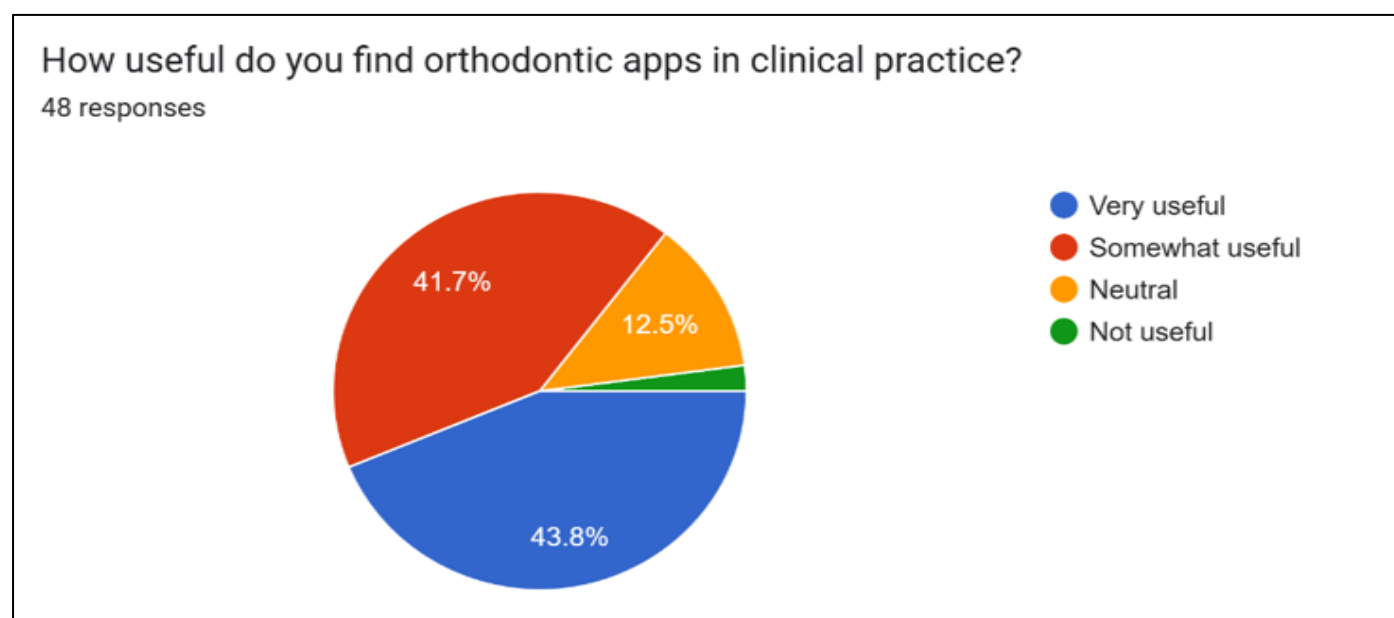

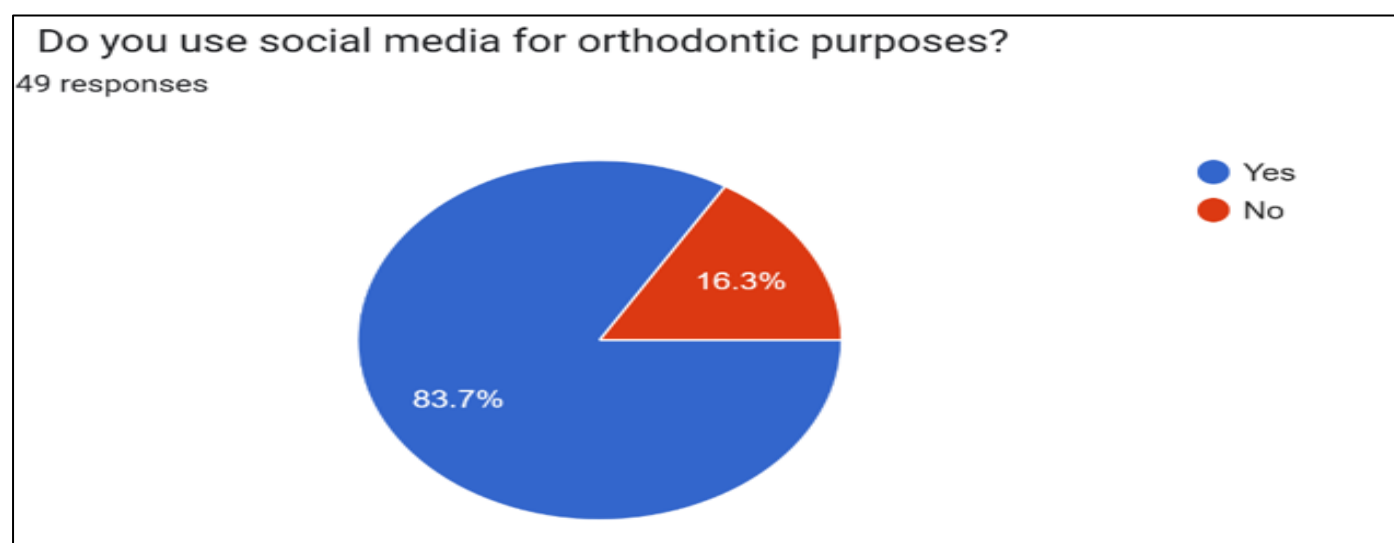Fig 7 Question No. 7 How Useful Do You Find Orthodontic Applications in Clinical Practice?

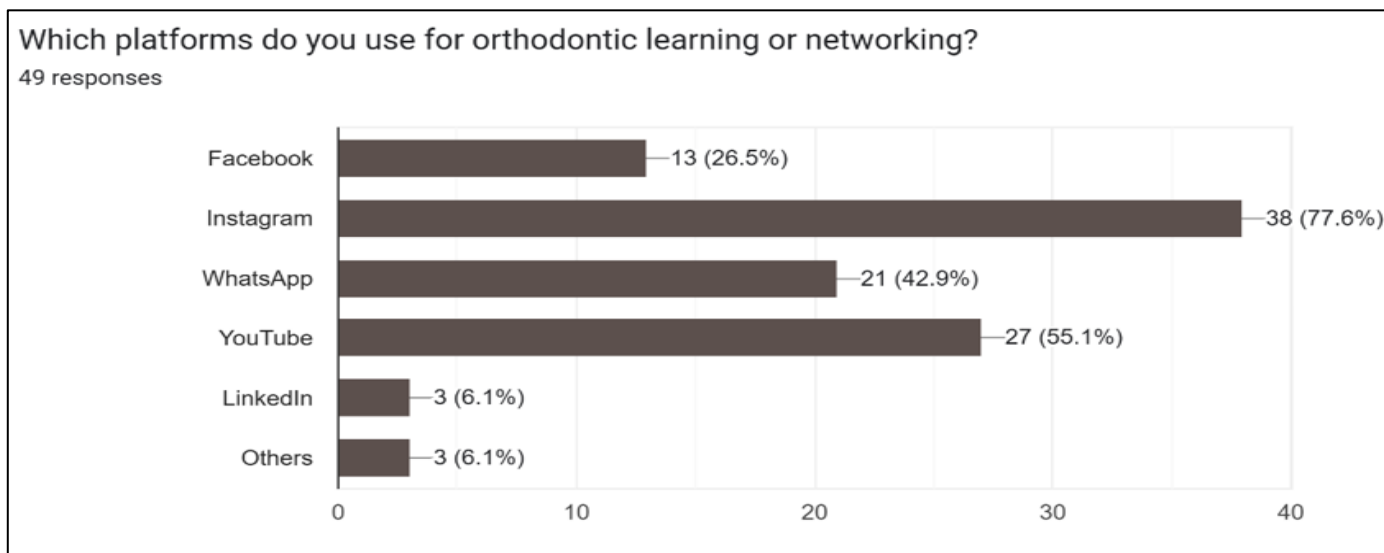Fig 8 Question No.8 Do You Use Social Media Networks For Orthodontic Purpose?

Fig 9 Question No.9 Which Platforms Do You Use For Orthodontic Learning Or Networking?
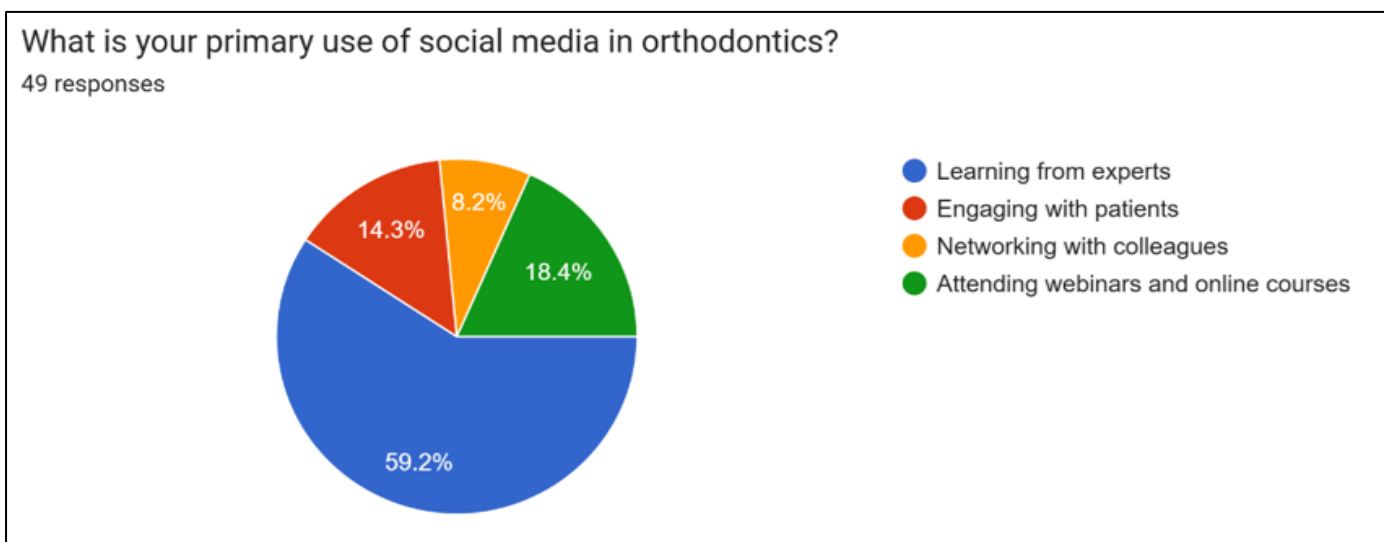

Fig10 Question No. 10 What Is Your Primary Use of Social Media Networks in Orthodontics?
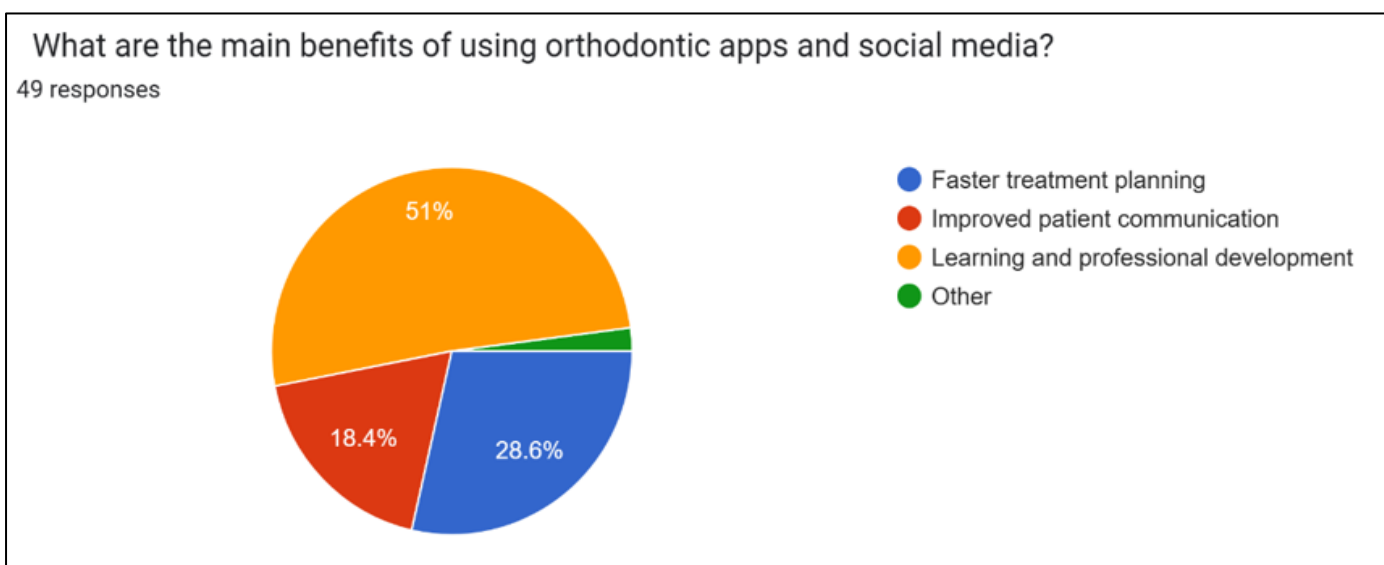
Fig 11 Question No. 11 What Are The Main Benefits Of Using Orthodontic Applications And Social Media Networks?

Fig 12 Question No.12 What Are The Biggest Challenges You Face In Using Digital Tools?

Fig 13 Question No. 13 Do You Think Orthodontic Applications and Social Media Networks Will Be Essential In the Future

Fig 14 Question No. 14 Would You Be Interested In Attending Training Sessions Or Workshops On The Effective Use Of Orthodontic Applications And Social Media Networks?

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II. RESULTS

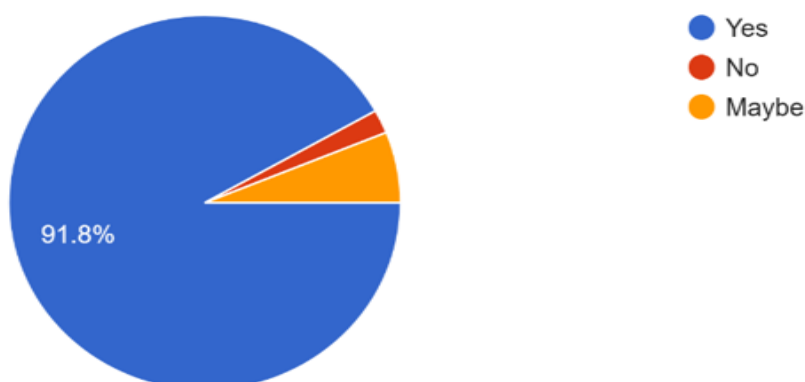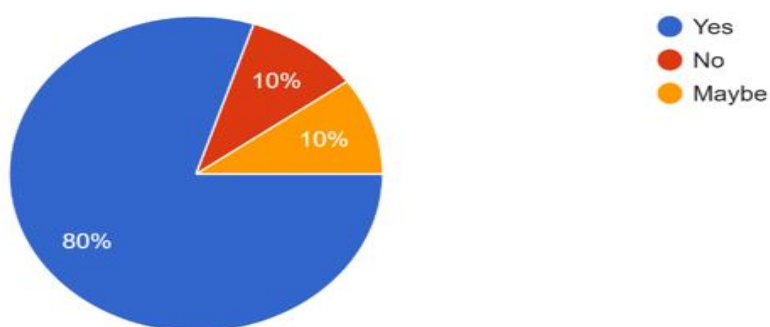The study had 50 dental practitioners in all, the majority of whom (72%) had less than five years of clinical experience. Most respondents were postgraduate students (36%), followed by those in private practice and academic settings. A significant proportion (83.7%) reported using social media networks for orthodontic purposes, primarily for learning from experts (59.2%), attending webinars or courses (18.4%), and professional networking (14.3%). Instagram (77.6%) and YouTube (55.1%) were the most commonly used platforms for professional development. Regarding orthodontic mobile applications, 60% of participants were aware of their existence, but only 38% had used them in practice. The most frequently used applications included Dental Monitoring and Dolphin Imaging, although a majority selected "other," suggesting diverse preferences. Perceived benefits of using these digital tools included enhanced learning and professional growth (51%), faster treatment planning (28.6%), and improved communication with patients (18.4%). However, respondents also reported challenges, with cost (46.9%), privacy concerns (18.4%), and the learning curve (18.4%) being the most significant. Notably, 91.8% of participants believed that mobile applications and social media networks will play an essential role in the future of orthodontics, and 80% expressed interest in attending training or workshops to enhance their digital competence.

III. DISCUSSION

The findings of this study provide valuable insights into the current trends and perceptions regarding the use of orthodontic mobile applications and social media networks among dental professionals in Dakshina Kannada. A substantial majority of respondents reported using social media networks for orthodontic purposes, particularly for educational activities such as learning from experts, attending webinars, and networking with peers. This mirrors the findings of Prithiviraj et al. (2023), who observed that more than half of orthodontists in the UK utilized social media networks to spread general orthodontic knowledge and advertise their practices. The predominance of platforms like Instagram and YouTube in this study further reflects the global shift toward visually engaging, user-friendly platforms that support both information dissemination and professional branding.

Despite relatively high awareness (60%) of orthodontic mobile applications among participants, only 38% reported actual usage. This gap between awareness and implementation may be attributed to several barriers highlighted in the study, including financial cost, concerns about data privacy, and the perceived complexity of using such tools. These concerns are consistent with the literature, including studies by Siddiqui et al. (2021), who emphasized the lack of high-quality, evidence-based orthodontic applications available for clinicians and patients. Moreover, the absence of orthodontic applications in national health repositories, such as the NHS Applications Library, likely

contributes to the cautious approach adopted by many professionals.

The preference for applications like Dental Monitoring and Dolphin Imaging among users in this study suggests a trend toward tools that offer treatment tracking and imaging capabilities—features particularly valuable in orthodontic practice. However, the high proportion of respondents selecting "other" for app usage indicates a lack of standardized tools, further emphasizing the need for evaluation and endorsement of reliable applications in orthodontics.

Importantly, the study reveals a forward-looking mindset among dental professionals, with 91.8% believing that mobile applications and social media networks will be essential in the future of orthodontics. Additionally, 80% expressed willingness to attend training or workshops, underscoring the urgent need for structured educational initiatives to enhance digital literacy in clinical settings. Integrating training on the ethical, practical, and clinical aspects of digital tool usage within postgraduate dental curricula and continuing professional development (CPD) programs would be a strategic step forward.

These findings also have implications for policy makers and app developers. The demand for user-friendly, cost-effective, and secure digital tools presents an opportunity to bridge the gap between technological innovation and clinical application. Collaborative efforts between dental institutions, regulatory bodies, and technology developers could pave the way for the creation of validated digital platforms tailored to orthodontic care.

Overall, this study confirms the mounting data indicating that, despite the underutilization of digital orthodontic instruments, there is a strong readiness and demand among professionals to embrace them. Future research should aim to explore the effectiveness of these tools in improving treatment outcomes and patient compliance, as well as address barriers related to cost, data security, and usability through larger, multicentric studies.

IV. CONCLUSION

This study highlights a growing awareness and positive attitude toward the use of orthodontic mobile applications and social media networks among dental professionals in Dakshina Kannada. While actual usage of orthodontic applications remains moderate, the high level of interest and willingness to adopt evidence-based tools indicates significant potential for future integration into clinical practice. Social media networks, particularly Instagram and YouTube, is already widely used for educational and networking purposes, reflecting its role in contemporary professional development. However, key barriers such as cost, privacy concerns, and lack of training limit the broader adoption of these technologies. Addressing these challenges through affordable, secure, and validated digital solutions— alongside structured training programs—could enhance the quality of orthodontic care and professional efficiency. As

digital platforms continue to evolve, it is imperative that dental education and policy frameworks adapt accordingly to equip practitioners with the skills needed to harness these tools responsibly and effectively.

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