

From Bench to Bytes: Utility of social media platforms by Pathology Residents

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Abstract

Background: The rise of virtual media has expanded to various fields and the medical profession has not been immune to its influence. The purpose of our study was to analyse and evaluate the impact of virtual social networks, on the professional growth and career progression of Pathology residents.

Materials and Methods: A cross-sectional survey was undertaken at the section of Chemical Pathology, Department of Pathology and Laboratory Medicine, Aga Khan University, Karachi. An online, questionnaire based on google forms was sent via WhatsApp application to the Pathology residents (n = 30) from July to August 2023. The anonymity of the participants was maintained. The statistical analysis was performed using Microsoft Excel 2019.

Results: A total of 25 (83%) Pathology residents participated in the survey. 72% of the participants were females and 28% were males. Chemical Pathology residents constituted the largest proportion at 44%, followed by 24% from Hematology, 24% from Microbiology and 8% from Histopathology. 60% of the trainees acknowledged using social media platforms routinely for professional development. The most used social media platforms were YouTube (48%), Twitter (36%), Facebook (12%) and Instagram (4%). Social media network was perceived the most useful in increasing understanding regarding the profession (60%), strengthening the proficiency in problem-solving (56%) and enhancing critical thinking abilities (52%) whereas it was regarded as somewhat useful in enhancing clinical/professional decision-making skills (52%) and clinical expertise (60%).

Conclusion: Social media is gaining popularity in the realm of medicine and this survey reveals the perspective of Pathology residents on the social media networks and its growing impact on their professional growth.

1. INTRODUCTION:

Social media is the new monarch of the 21st century. From the mere supplementary communication tool, it has transitioned to become the core of modern-day lifestyles. Across the world, social media has facilitated communication, collaboration, networking, and the generation of novel ideas among medical students, physicians, and laboratory professionals (1). Pathologists, the usually behind-the-scenes physicians, are swiftly adapting social media and gaining significant visibility as active users on these platforms (2). This is in part due to the impact of COVID-19 pandemic that prompted numerous pathology departments and residency programs to increase their presence on social media platforms and establish their own social media pages (1).

The rising adoption of social media by the current generation of postgraduate trainees comes with its own set of benefits and drawbacks (3). Nonetheless, when employed effectively, social media can be harnessed to aid in professional growth of pathology residents and the advancements in their career. A plethora of online tools are available to pathologists, encompassing various social media platforms like Facebook, Twitter, and Instagram. These platforms offer diverse educational content, including virtual posts, pictures, newly published articles, and YouTube videos that offer free access to lectures and tutorials (4). Hence, these online platforms allow pathologists to effortlessly apply acquired knowledge to practical clinical situations (4).

The reason why these online social platforms can influence professional development lies in their ability of unparalleled networking – a communication circuitry so rapid, economic and user-friendly that connections can be built, and relationships can be maintained all across the globe in the fraction of time that was possible before. These connections are seemingly important, particularly for residents, to accelerate their professional growth, develop research and scientific collaborations at national levels and share interesting and novel laboratory report findings with their peers and seniors that can broaden their interpretative vision. Furthermore, free online access to the relevant course materials regardless of their geographical location gives equal opportunities to trainee pathologists to thrive professionally.

The possible fusion of digital pathology and artificial intelligence holds the promise of revolutionizing the practices of diagnosticians and could soon mark the third evolution in the field of pathology (5). The disseminated presence of these social media platforms could be the beginning of this revolution, advocating the need for a new generation of pathologists who can effectively handle and perpetuate this novel mode of information.

The aim of this study was to analyze and evaluate the impact of virtual social networks on the professional growth and career progression of Pathology residents at a tertiary care hospital in a developing country.

2. MATERIALS AND METHODS:

A cross-sectional survey was undertaken at the section of Chemical Pathology, Department of Pathology and Laboratory Medicine, Aga Khan University, Karachi. An online questionnaire based on google forms was sent via WhatsApp application to residents (n = 30) of Department of Pathology and Laboratory Medicine at Aga Khan University Hospital, Karachi and peer Chemical Pathology residents working at other center in Pakistan to elicit information regarding the choice of social media platforms, their utilization, the type of preferred content viewed on these platforms and their impact on the professional growth and development of the residents. Responses were collected from July to August 2023.

A team comprising of a Resident Medical Officer and a Chemical Pathology Consultant serving as faculty at the department designed the questionnaire survey. The survey was organized to be completed within a 10-minute timeframe, ensuring it was not overly time-consuming for participants. It comprised of 15 questions divided into three sections. The first part entailed demographics of the participants and questions regarding their educational qualification and years of clinical experience. The subsequent section focused on the selection of social media platforms and their utility in the enhancement of professional development of the trainee pathologists. It included items that inquired the participants of the particular social media applications they relied on for their professional use, the type of online pathology-related content they enjoyed and an average time duration the respondents dedicated to social media networks. The final section of the survey evaluated the perception of residents regarding the impact of virtual media on their professional growth.

Informed consent was taken from the participants at the beginning of the survey. Participation in the survey was entirely optional, and individuals had the choice to opt out and withdraw by not submitting their responses. To maintain confidentiality, the survey did not collect any personal information, such as email addresses, that could potentially identify the participants. The anonymity of the participants was maintained, and no personal information was requested or saved. The statistical analysis was performed using Microsoft Excel 2019. Frequency and percentages were calculated for gender, experience level and designation. While descriptive results based on the responses were also recorded.

This study was conducted in compliance with the ethical principles for medical research involving human subjects, in accordance with the Declaration of Helsinki.

3. RESULTS:

This study provides data from twenty-five residents belonging to the department of Pathology and peer Chemical Pathology residents working at other centers in Pakistan. Laboratory

Medicine at Aga Khan University Hospital (AKUH). After an informed consent, a total of 83% (n = 25) responses were collected. 72% of the participants were females and 28% were males with age ranging between 26-33 years. The years of clinical experience ranged from 1 to 6 years. The postgraduate training in department of Pathology and Laboratory medicine is a 5-year program but a few of the trainees worked as resident medical officers in the department prior to their training and therefore have clinical experience greater than 5 years. Table 1 presents the descriptive attributes of the respondents.

3.1. Choice of Social Media Platforms and their Utilization

The inclination of pathology residents towards online social platforms and their usage was assessed in the first part of the survey. Majority of the respondents i.e., 60% (n = 15) acknowledged using social media platforms routinely for professional development and 52% (n = 13) of the respondents dedicated an average of 3-6 hours daily to social media networks. The most used social media platforms in descending order of frequency were YouTube (48%), Twitter (36%), Facebook (12%) and Instagram (4%) and 48% (n = 12) of the respondents selected YouTube as a more user-friendly and convenient virtual application for professional use followed by Twitter and Facebook. The range of information gathered from this survey, involving the options and usage of social media platforms, is summarized in Figure 1.

3.2. Preferred educational content type on Social Media

The second part of the survey was dedicated to the type of educational content favored by the respondents. 84% (n = 21) of the trainees agreed on the idea of utilizing social media to share

pathology related content, with interesting case reports with pictures being voted as the most enjoyable type of educational content on social media (56%) followed by academic videos and research articles.

3.3. Effect of Social Media on Professional Development

The final part of the survey assessed the perception of participants regarding the impact of social media on their professional development. The responses were recorded on a three-point Likert scale (1 = very useful, 2 = somewhat useful, 3 = not at all useful). Social media network was perceived the most useful in increasing understanding regarding the profession by 60% (n = 15) of the participants while the remainder percentage responded neutrally. 56% (n = 14) of the residents agreed that social media platforms helped in strengthening proficiency in problem-solving whereas these online platforms were considered ineffective by a single respondent. The question regarding the enhancement of critical thinking abilities was replied positively by 52% (n = 13) while the other trainees responded neutrally. The virtual platforms were regarded as somewhat useful in enhancing clinical decision-making skills by 52% of the respondents (n = 13) while a solitary participant answered negatively. 60% (n = 15) of the residents were of the view that social media was useful to some extent in improving clinical expertise. The spectrum of data elicited regarding pathology residents' perception of social media's impact on their professional development is illustrated in figure 2. Furthermore, the data was divided into two groups based on the age groups which revealed no significant relationship between ages and perception of social media impact on the professional development, as depicted in table 2.

Table 1: Description of participants (n = 25)

Variables		Number (n)	Percentage (%)
Gender	Males	7	72
	Females	18	28
Section	Chemical Pathology	11	44
	Hematology	6	24
	Microbiology	6	24
	Histopathology	2	8
Educational Qualification	Bachelors of Medicine and Bachelors of Surgery (MBBS)	25	100
Years of clinical experience	1-2 years	15	60
	3-4 years	6	24
	5-6 years	4	16

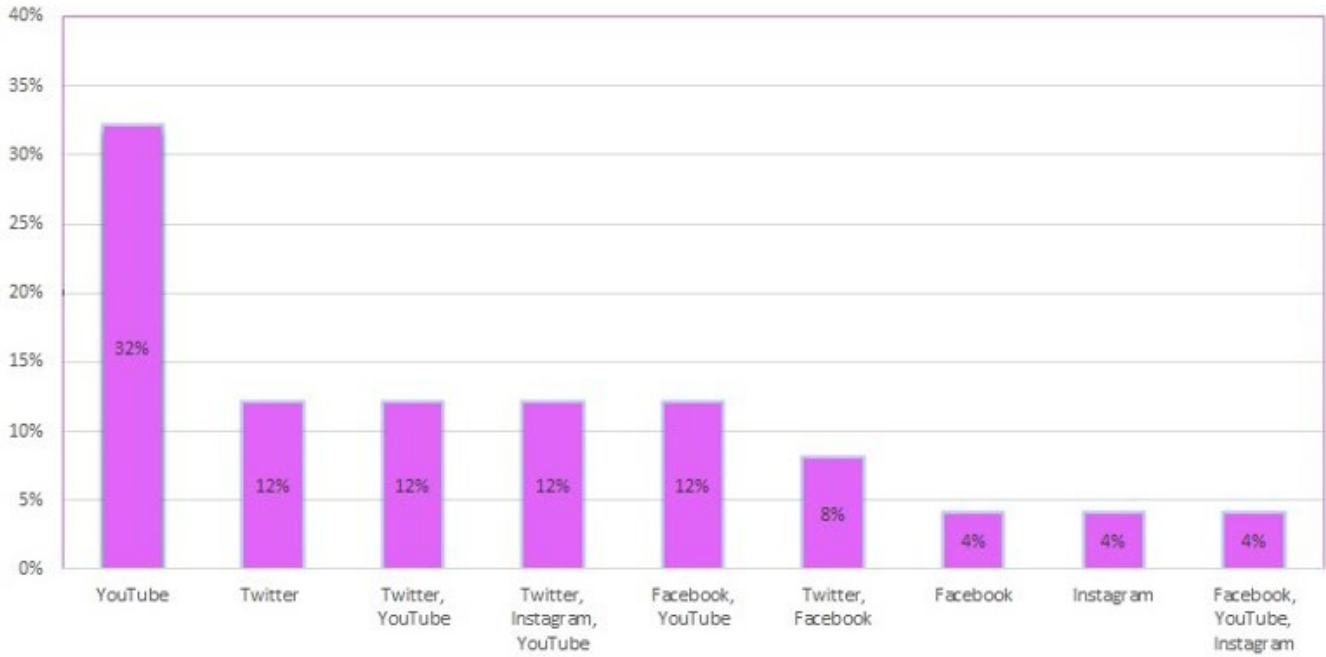


Figure 1a: Social media platforms to facilitate your professional development

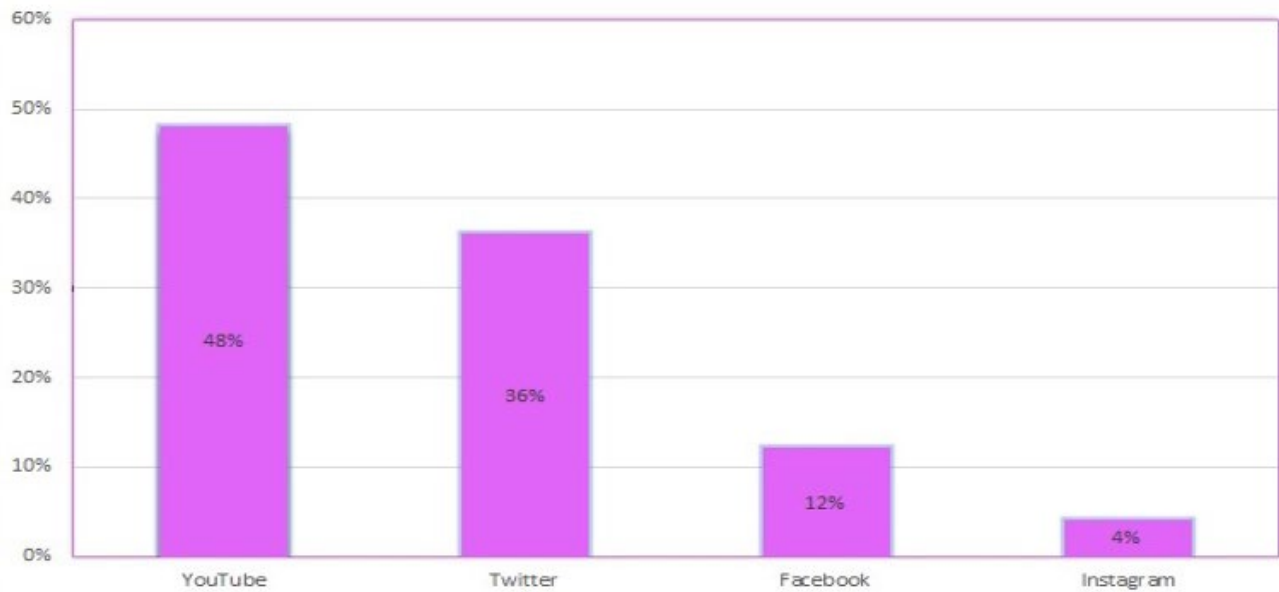


Figure 1b: User-friendly social media platforms for professional use

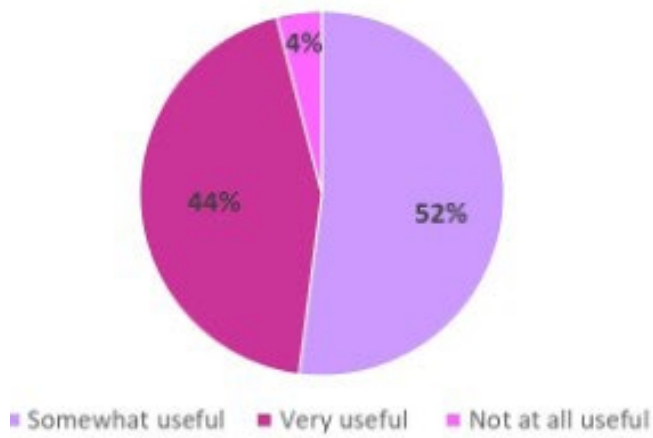


Figure 2a: Enhancing clinical/professional decision making skills

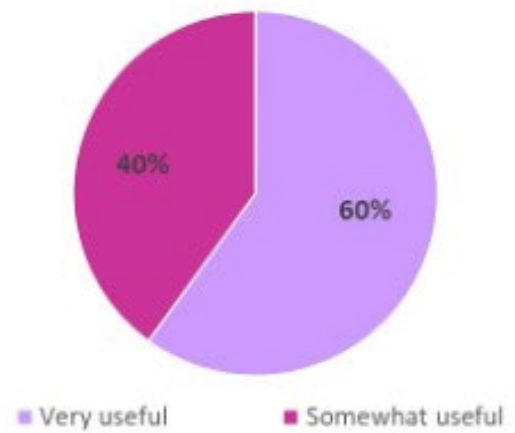


Figure 2b: Increasing understanding of the profession

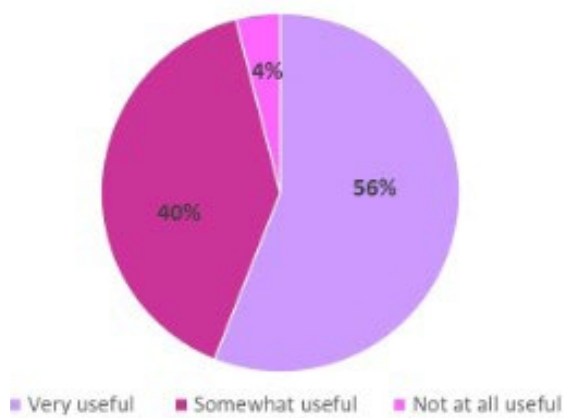


Figure 2c: Strengthening proficiency in problem-solving

Table 2: Perception of social media impact on professional development between the two groups categorized based on ages (n = 25)

	Group 1 (age ≥ 30)	Group 2 (age < 30)
Increasing understanding of the profession	Very useful = 8	Very useful = 7
	Somewhat useful = 3	Somewhat useful = 7
	Not at all useful = 0	Not at all useful = 0
Enhancing clinical/professional decision-making skills	Very useful = 5	Very useful = 6
	Somewhat useful = 6	Somewhat useful = 7
	Not at all useful = 0	Not at all useful = 1
Strengthening proficiency in problem-solving	Very useful = 7	Very useful = 7
	Somewhat useful = 4	Somewhat useful = 6
	Not at all useful = 0	Not at all useful = 1
Enhancing clinical expertise	Very useful = 6	Very useful = 9
	Somewhat useful = 5	Somewhat useful = 5
	Not at all useful = 0	Not at all useful = 0
Enhancing critical thinking abilities	Very useful = 4	Very useful = 8
	Somewhat useful = 7	Somewhat useful = 6
	Not at all useful = 0	Not at all useful = 0

4. DISCUSSION:

Social media is a magical wand that has extraordinarily transformed the mundane lifestyles. One of the greatest metamorphoses it has achieved is the interconnectivity between medical professionals across borders and beyond their respective medical disciplines. From connecting medical students to well-established pathology programs and assisting pathology residents in developing connections with distinguished pathologists and experts in the field (6), it has brought the usual ‘behind-the-scenes’ Pathology physicians in the limelight. Social media platforms have also played a contributing role in developing a sense of kinship among aspiring pathologists and attending physicians. It has enabled relationship-building with the chairs and directors of residency programs and helped discover unexpected fellowship openings (7).

Additionally, social media networks offer pathology residents and fellows to seize the opportunity to showcase their skills of knowledge, leadership and education through their online professional accounts that can serve as an ‘online resume’. There are well-known tales of residents who were offered research assignments, positions on editorial boards, speaking invitations and an array of other chances via social media platforms (8).

These virtual platforms have aided numerous collaborative research between pathology residents on national levels. Unnoticed conferences at a residency program or research/educational presentations by a well-renowned speaker at a

national level may attract a limited audience of tens or maybe a few hundreds, but this reach can be expanded to involve thousands of mindsets by a handful of social media posts circulating on the internet. The beauty of social media diversity is exemplified by the fact that this audience reach can range from medical students to trainee residents, from practicing pathologists to non-pathologists (8). The magnitude of power that a single click or a single virtual post possesses is intense, and its broadcast is even more enormous.

Social media networks have indeed diminished the geographical distances and erased topographical boundaries. A small-city trainee resident from a developing country can easily have access to the same education material that a Harvard Medical School resident has - this opens doors of equal opportunities for trainees who may lack access to resources in their own settings.

Even though the medical education predominantly relies on textbooks, and they remain the cornerstone of medical curriculum, social media platforms augment the role of these textbooks by imparting free access to knowledge combined with the sound narratives and personal experiences of the senior antecedents - pathologists who have lived their era and who can contribute professionally to the pathologists to come (9). This is strongly substantiated by our survey where majority of the respondents agreed that social media helps in increasing understanding about the profession and strengthens their problem-solving skills. This can be attributed to the interesting case reports with eye-catching

visual illustrations posted on online platforms and groups, as evidenced by most responses in our survey. Residents can stay well-acquainted with the engrossing case scenarios and receive latest updates in their field of interest.

Social media platforms have also birthed the concept of 'e-mentoring', where the diagnostic insights, individual expertise, and pearls of knowledge gained through years of practicing pathology by the older generation can be transmitted to the newer generation as valuable wisdom.

One of the interesting disclosures of our survey was that a greater percentage of residents responded affirmatively to using social media for the enhancement of their professional development in the field of pathology. This optimistic inclination of the young generation of pathologists-to-be calls for a need to create an alumni group where the predecessors and future pathologists can connect in a symbiotic relationship. Established pathologists can benefit by building and fostering global professional connections at an unprecedented pace while the aspiring physicians can nurture on the decades of experiences that are passed on to them like a precious heirloom (10). This is vital for their career progression and the training institute can also benefit from this fluid lattice of virtual connections by an expansive global reach, funding of scholarships and research projects by the alumni, a fostering sense of legacy and tradition and continued learning and career support to the juniors. The pool of educational resource materials available on the conventional social media platforms brings forward yet another challenge - authenticity of the provided information. These resources pertaining to education are non-standardized and unsupervised and this can lead to unreliable dissemination of information among physicians and residents alike. Fortunately, organizations like eJIFCC and EFLM have invested sustained efforts and devotion to standardize the postgraduation education of trainees in the field of laboratory medicine by developing free online learning resources. In addition to the social media platforms discussed here, the electronic journal of the International Federation of Clinical Chemistry and Laboratory Medicine (EJIFCC) and European Medicine of Clinical Chemistry and Laboratory Medicine (EFLM) have invested focused and committed endeavours in postgraduate education. In the area of e-learning, the EFLM Task group for Syllabus course (TG-ESC) has created a curriculum comprising more than 40 modules and spanning over 300 lectures covering a wide range of topics in the field of laboratory medicine (11). The course delivers a set of highly informative online lectures that delve into practical advice and useful resources to help individuals acquire the vital skills and competencies necessary for practicing laboratory medicine. Advancing this distance education and e-learning platform, they introduced live and on-demand webinars on the most sought-after topics of laboratory medicine from expert speakers from across

the globe. Moreover, the collaborative effort between the New England Journal of Medicine, Clinical Chemistry, and Area9 in establishing the Learning Lab has yielded the most cutting-edge adaptive learning tool in the field of laboratory medicine. It is freely accessible to educators and trainees and offers over 110 courses. The IFCC e-academy, managed by the IFCC Committee on Internet and Digital Communications (C-IDC) serves as a lead for IFCC member societies in designing educational curricula for postgraduate trainees specializing in laboratory medicine. It also provides freely accessible global educational resources to laboratory professionals and trainees. One of the enriching resources developed by IFCC for e-learning are the webinars and distance learning modules that aid in professional growth. These include a broad-spectrum series of educational topics including advancing healthcare webinar series, POCT webinars, etc.

5. CONCLUSION:

Social media has taken the world by storm and more and more pathologists are making their presence palpable online. Junior pathologists - who are the leaders of tomorrow - can leverage this use of modern-day virtual technology for amelioration of their professional growth.

Declaration of competing interest:

None.

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