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ORIGINAL RESEARCH

Parallel endodontic education via social media: An exploratory survey study

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Abstract

There is insufficient research to evaluate social media's influence on endodontic education. Therefore, this study assessed the percentage of students utilising Facebook in their education and the factors influencing their engagement. A survey was conducted on dental students, interns and dentists undertaking specialist programmes. Categorical data were analysed using Fisher's Exact test and multiple pairwise comparisons. The significance level was set at $p < 0.05$. Responses were received from 801 participants, with 98.4% using Facebook for endodontic knowledge. Although most students knew that scientific evidence is not always provided, they still deemed such information valuable as it was a practical demonstration of clinical cases. Most students turn to Facebook for endodontic education to compensate for the gap between their academic education and clinical practice. The utilisation of social media for education can be a concerning phenomenon and should not be ignored by academic institutes.

KEYWORDS

endodontic education, social media

INTRODUCTION

The process of acquiring and sharing information has drastically changed as millions of people embraced social media [1, 2]. This change had its impact on medical practice, doctor–patient relationships, public health and health research [1]. Such impact was felt worldwide during the COVID-19 pandemic [2, 3]. During the pandemic, the value of social media to pass scientific knowledge and communicate with peers became essential due to social distancing requirements [2]. However, the negative impact of social media was also recognisable as the health authorities had to manage misinformation [3].

Studies have shown that the 'learning environment' has become unique regarding how new generations train and learn [2, 4, 5]. Throughout the last decade,

several social media platforms have been incorporated into medical education [6, 7]. Pander et al. [8] showed that Facebook (Meta Platforms), in particular, became acknowledged by medical students in different aspects of their learning process, such as sharing and discussing clinical cases and preparing for examinations [2, 7, 8]. Many studies handled the involvement of social media in medical education [2, 7, 8]. However, these studies were not speciality-specific and mainly investigated whether there is a social media involvement in education rather than the quality of the presented data [9]. Also, these studies did not investigate the factors that triggered students to embrace such platforms despite attempts made by academic institutes to engage students through implementing multimedia learning aids and hybrid learning [10, 11].

There is a potential concern about the quality of endodontics-related information on social media and how that may affect dental students [12, 13]. This concern stems from the fact that the curriculums of educational institutes have to follow quality-assured standards that adopt benchmarking documents [14, 15]. However, nothing mandates that the data posted on social media always adheres to evidence-based clinical practices. Also, social media content might be affected by sponsorships, biases and consumer engagement strategies for profit maximisation [1]. Furthermore, studies have found that online information about health concerns can often be of limited quality or even be incorrect and misleading [12, 16–18]. An explicit testament to the importance of this issue in endodontics is the considerable number of clinical cases posted on social media that employed minimal access cavity designs without sufficient scientific support. This phenomenon is described plainly by Silva et al. as an ‘educational disservice’ [13]. Hence, it is imperative to investigate the factors that motivate students to adopt social media as a learning platform, where it became their responsibility to differentiate between evidence-based clinical practices and pseudoscience.

Facebook is the most prominent social network worldwide, reaching 59% of all social media users with roughly 2.80 billion monthly active users as of the second quarter of 2021 [19]. Although some reports indicate an exodus of young adults from Facebook, they merely shift to other platforms rather than abandon social media [20]. Also, Facebook states within its user conditions a ‘non-exclusive, transferable, sub-licensable, royalty-free, worldwide license to use any intellectual property content’. Intellectual property includes patient images, radiographs, and other endodontic content posted. While this raises ethical concerns regarding patients’ rights and privacy [1], it makes Facebook the platform most suited for parallel education, where any user can post their clinical cases, not to mention false affiliations without legal repercussions [21].

Given the nature of the exploratory survey studies, no hypothesis was presumed, but rather a research question was formulated to guide the design of the survey’s sections and questions. The study was conducted as an online survey to evaluate the role of social media, represented by Facebook, in procuring endodontic knowledge.

MATERIALS AND METHODS

After consultation with the Ethics Committee of the Faculty of Dentistry at The British University in Egypt on 17 November 2019, it was decided that an ethics committee approval was not required [22]. Also, informed

consent was not needed, given the anonymous nature of the online survey.

Sample size calculation

A power analysis was designed to have adequate power to apply a statistical test of the research question regarding ‘Is Facebook involved in the process of knowledge procurement among endodontic students? If yes, what are the factors influencing it?’. By adopting a confidence interval of (95%), a margin of error of (5%) with finite population correction, and an expected frequency of social media usage of (87.9%) based on the results of a previous study [23]; the predicted sample size (n) was a total of 163 participants. Sample size calculation was performed using Epi Info™ for Windows version 7.2 (Centers for Disease Control and Prevention).

Question formulation

Questions were formulated as multiple-choice questions that were divided into 6 sections. During question formulation, there was a focus on clarity, validity and functionality [11]. Questions’ arrangement, grouping, and sections’ titles were designed to help the participants’ understanding and questions flow regardless of the planned analysis. All the questions were multiple choice and designed so the participants chose a single answer. The response choices available were arranged consistently across the whole survey to avoid confusing the participants, thus yielding error-laden data [24]. Answers were created so there was a spectrum of answers with no middle neutral option; A middle option is the third option in the standard five graded choices, such as the option ‘*Sometimes*’ among a range of ‘*Never*’ to ‘*Always*’. Another example of five graded choices is the option ‘*Neither disagree nor agree*’ among the range from ‘*Completely disagree*’ to ‘*Completely agree*’. The decision was made not to include a ‘middle option’ in two questions (reduced to one after the pilot): questions 7 and 9 (questions concerning the quality of the information in terms of the presence of references and the qualifications of those who posted them). Studies have shown that using an even number of responses encourages participants to report their true opinions rather than just choosing the middle neutral one [25–28]. Thus, omitting the middle option would avoid social desirability bias [27].

The questionnaire had three early exit questions, which were reduced to two after the first pilot study. The exit questions at its beginning ended the survey automatically. They served to rule out participants who were not

exposed to the scientific content under investigation instead of choosing random or irrelevant answers to the following questions. Given the nature of the second question, 'How do you describe your use of Facebook?' as an exit question, a stricter, clearer form of the options adopted by the 'Bergen Social Media Addiction Scale' was used [29]. Finally, both the face validity and content validity of the questionnaire construct were assessed.

Pilot

The survey was piloted two times on a sample of 30 participants randomly chosen from third-year dental students at the British University in Egypt. The pilot studies were performed using printed questionnaires in the presence of the lead author [30, 31]. A few adjustments were made after the first pilot and none after the second. The time needed to finish the questionnaire never exceeded 8 min. Appendix S1 details the pilot study and how the questions were modified.

Questionnaire implementation and dissemination

The questionnaire (Figure 1) was implemented using the online survey software *SurveyMonkey* (Momentive) [22]. During implementation, questions 17 and 18 were added at the end of the survey to avoid any bias stemming from sexism or prejudice. In addition, all the questions were checked for racial, social and gender neutrality [32]. The survey URL

was disseminated and shared periodically via Facebook, Instagram and WhatsApp social media platforms. The survey was also sent to students' unions of different colleges and heads of endodontic departments. A QR code link was also shared after lectures (including online lectures during the COVID-19 pandemic) to reach students who are not active on social media. The survey invitation had a cover letter stating that the survey anonymised respondents and that neither an incentive nor a penalty would occur for participation. The cover letter also stated that the survey was intended for dental students of any academic level as long as they have started on endodontics; thus, the identification options did not include first and second years students. The survey was planned to be disseminated in February 2020 and concluded in February 2021. However, when the COVID-19 pandemic dictated a shift to online learning, results were collected in November 2020, and the survey had a second run of 10 months from April 2021 to January 2022. The second run of the survey was conducted to examine the effect of COVID-19 on the utilisation of Facebook for endodontic education. The statistical comparison between both intervals would be made among Egyptian dental students only to ensure the homogeneity of lockdown timings among participants since these timings varied among nations. Data were collected via the same software: *SurveyMonkey*, since it provides three important benefits: first: it generates an anonymised data summary along with simple descriptive statistics [22], second: it does not allow an IP address to take the questionnaire more than one time, which prevents participants from completing the survey more than once, finally: it has the option to discard incomplete surveys to ensure the homogeneity of data.

Facebook as an Information Source in Endodontics

1st section: Academic level and subjective personal perceptions

1. Please state your educational level:

- Third year student
- Fourth year student
- Fifth year student
- Intern
- Postgraduate student (Endodontic Program)
- Postgraduate student (Programs other than Endodontics)

2. How do you describe your use of Facebook?

- Very active
- Occasional user
- Rarely
- I don't have a Facebook account

NOTE: If the answer is "d", the survey ends.

3. Do you learn anything related to endodontics during the time you spend using Facebook?

- Yes
- No

NOTE: If the answer is "b", the survey ends.

2nd section: Engagement with dentistry Facebook groups

4. Are you a member of any dentistry-oriented groups on Facebook where you can see Endodontic-related posts, cases and/or topics?

- Yes
- No

5. Do you actively participate in such groups?

- Yes, I post my cases and/or I actively get into discussions or give advice/criticism
- No, I only read and watch

6. Do you learn anything from following endodontics-related groups?

- Yes
- No

3rd section: Quality of information tackled

7. Does the information you find on Facebook generally (whether in specialized groups or posted by Doctors whom you follow) have its references or evidence attached?

- Always
- Usually
- Sometimes
- Rarely
- Never

8. Do you check if the information you got is academically correct?

- Always
- Only if I doubt it
- Never

9. Do you check the qualifications of who is posting the information?

- Yes
- No

4th section: Factors influencing information procurement

10. What made you adopt Facebook as an acceptable learning medium? (You can choose more than one answer in questions 9, 10 & 11 only)

- Everyone in my social circle does it
- Data introduced is readily available
- Data introduced is clear and shown on actual clinical cases
- Defects in the academic way of learning that includes lectures and hands-on
- It allows access to the field pioneers and opinion leaders

11. What is the most decisive criteria upon which you choose to accept information found on Facebook? (You can choose more than one answer in questions 9, 10 & 11 only)

- The academic position of the Doctor posting information
- Whether or not this information matches with what you have learned in college
- Doctor's fame, the number of his Facebook followers & the number of comments praising his work
- The Doctor's clinical talents that is obvious in his posts
- Whether or not the information is backed by references &/or evidence

12. Why was the information that you got on Facebook new & learnable to you? (You can choose more than one answer in questions 9, 10 & 11 only)

- It is/was not available in my academic learning
- It is/was available but did not sound applicable in real practice
- It is/was probably available but it was not presented in an interesting way
- It is/was probably available but it sounds more trustworthy from famous Doctors
- It is/was more advanced than I can/could learn academically

5th section: Personal opinions concerning the relation between organized academic education and information procurement via Facebook

13. The effect of the information you get can be described as:

- I learn new techniques and fundamental concepts
- I know more about products/devices and I buy them for my practice
- I learn about both, new techniques and recent products

14. "There is a gap between academic teachings and actual practice" ..

- I agree
- I don't agree

15. Did you attend courses or workshops because of the dentist/instructor reputation on Facebook?

- Yes
- No
- Not yet, but I will

16. How do you think of Facebook as a mean of learning?

- Chaos that needs monitoring from academic community
- Well established available online mentoring by the best practitioner
- Freedom of speech is a must & filtering such data is the practitioner's responsibility

6th section: Demographic data

17. You studied/are studying in a...

- State funded University
- Private University

18. Nationality

Thank you for your participation.

FIGURE 1 Questions and choices presented in the final survey.

Statistical analysis

Categorical data were presented as frequency and percentage values and were analysed using Fisher's exact test followed by multiple pairwise comparisons utilising multiple z -tests with Bonferroni correction. The significance level was set at $p < 0.05$ within all tests. Statistical analysis was performed with R statistical analysis software version 4.1.2 (R Core Team) for Windows.

RESULTS

Demographic analysis and participation

SurveyMonkey collected 801 responses, and the average time to finish the survey was 4 min and 54s. The distribution of participants is represented in Figure 2. There were 75 non-Egyptian participants who were of various nationalities, including 6 Australians, 8 Italians, 13 Iraqis and 4 Lithuanians.

Engagement of participants with Facebook as a knowledge procurement source and with endodontic Facebook groups

Results showed that almost all students (99.2% of the participants) are Facebook users and 89.3% of these follow

Endodontics-oriented groups. Furthermore, there was no significant difference between Egyptian participants and the collective of other nationalities (Table 1).

Participants' perception of their academic education and Facebook as a collateral source

Results demonstrated that the vast majority of the participants (<70% for any selected group) perceive a gap between their education and actual practice. Participants' opinion concerning Facebook as an educational tool was divided, though 40% of the participants stressed the importance of free speech. There was no significant difference between Egyptian participants and the collective of other nationalities regarding their opinions or the factors influencing their choices (Table 2).

State-funded vs private universities

There was no significant difference between Egyptian dental students receiving their education in state-funded universities and private universities (Table 3). There were 597 Egyptian dental students; 136 were in state-funded universities, and 391 were in private universities.

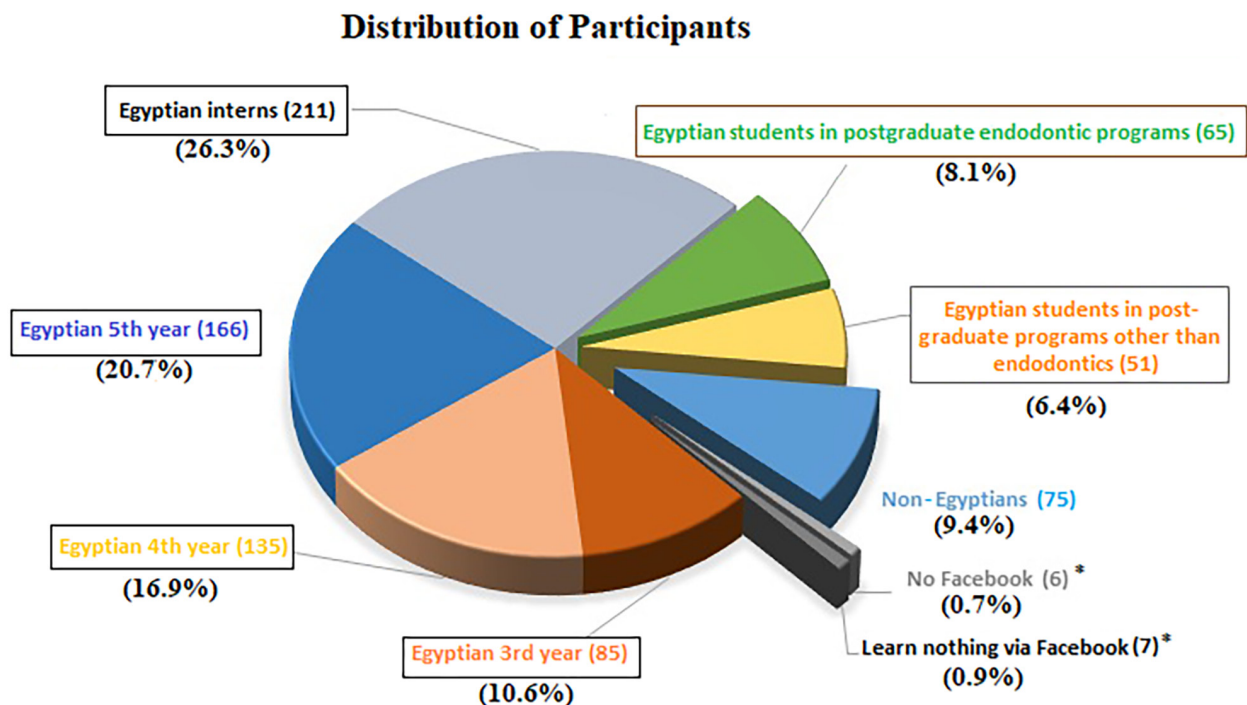


FIGURE 2 Pie chart representing participants' distribution. The 'No Facebook' and 'Learn nothing via Facebook' sections would exit the survey automatically.

TABLE 1 Student' engagement with Facebook as a parallel mean of knowledge procurement among Egyptian and non-Egyptian students.

Question	Answer	Egyptian		Non-Egyptian		χ^2	p-Value
		n	%	n	%		
How do you describe your use of Facebook? (n = 801)	Very active user	389	53.9%	36	45.6%	6.57	0.087
	Occasional user	292	40.4%	34	43.0%		
	Rare use	37	5.1%	7	8.9%		
	I don't have a Facebook account	4	0.6%	2	2.5%		
Do you learn anything related to endodontics during the time you spend using Facebook? (n = 795)	Yes	713	99.3%	75	97.4%	2.87	0.090
	No	5	0.7%	2	2.6%		
Are you a member of any dentistry-oriented groups on Facebook where you can see Endodontics-related posts, cases and/or topics? (n = 788)	Yes	640	89.8%	70	93.3%	0.61	0.418
	No	73	10.2%	5	6.7%		

Note: Values with different superscript letters within the same horizontal row are significantly different *; Significant ($p \leq 0.05$).

TABLE 2 Student' perception of their academic education as well as Facebook as a parallel mean of knowledge procurement among Egyptian and non-Egyptian students.

Question	Answer	Egyptian		Non-Egyptian		χ^2	p-Value
		n	%	n	%		
There is a gap between academic teachings and actual practice? (n = 788)	Agree	545	76.4%	61	81.3%	0.66	0.389
	Disagree	168	23.6%	14	18.7%		
What do you think of Facebook as a mean of learning? (n = 788)	Chaos that needs monitoring from academic community	215	30.2%	24	32.0%	0.19	0.927
	Well established available online mentoring by the best practitioners	186	26.1%	18	24.0%		
	Freedom of speech is a must and filtering such data is the practitioners responsibility	312	43.8%	33	44.0%		
Why was the information that you got on Facebook new & learnable to you? (n = 1101) (Participants could choose more than one choice)	It is/was not available in my academic learning	177	17.6%	26	28.0%	7.37	0.147
	It is/was available but did not sound applicable in real practice	234	23.2%	20	21.5%		
	It is/was probably available but it was not presented in an interesting way	245	24.3%	22	23.7%		
	It is/was probably available but it sounds more trustworthy from famous dentists	84	8.3%	4	4.3%		
	It is/was more advanced than I can/ could learn academically	268	26.6%	21	22.6%		

Note: Values with different superscript letters within the same horizontal row are significantly different *; Significant ($p \leq 0.05$).

Impact of the COVID-19 pandemic

After excluding the 13 participations who exited the survey via the first two questions, the total number of

participants during the first run of the survey was 363, while the total number of participants during the second run was 425. There was a significant association between the time of response (first interval or second)

TABLE 3 Associations with the nature of university funding among Egyptian undergraduate students who have Facebook accounts ($n = 597$).

Question	Answer	State-funded university		Private university		χ^2	p-Value
		n	%	n	%		
Are you a member of any dentistry-oriented groups on Facebook where you can see Endodontic-related posts, cases and/or topics?	Yes	136	87.2%	391	88.7%	0.12	0.664
	No	20	12.8%	50	11.3%		
Do you learn anything from following endodontics-related groups?	Yes	119	76.3%	350	79.4%	0.48	0.428
	No	37	23.7%	91	20.6%		
The effect of the information you get can be described as	I learn new techniques and fundamental concepts	30	19.2%	84	19.0%	1.24	0.572
	I know more about products/devices and I buy them for my practice	14	9.0%	54	12.2%		
	Both	112	71.8%	303	68.7%		
There is a gap between academic teachings and actual practice?	Agree	126	80.8%	328	74.4%	2.25	0.126
	Disagree	30	19.2%	113	25.6%		

Note: Values with different superscript letters within the same horizontal row are significantly different *; Significant ($p \leq 0.05$).

and the perception of students to whether or not the data posted on Facebook had references ($\chi^2 = 17.79$, $p = 0.001$), with a significantly higher percentage of respondents in the first interval answering 'Always' 17 (6.3%) and 'Sometimes' 152 (56.3%), while a significantly higher percentage of respondents in the second interval answering 'Rarely' 69 (21.1%). Besides the mentioned association, there was no statistically significant difference between the two intervals. Associations with a time of response are presented in Figures 3 and 4.

Perception of Facebook as a mode of learning

(a) Dental students and interns

There was a significant association between academic development and perception of Facebook as a mean of learning ($\chi^2 = 14.20$, $p = 0.028$), with a significantly higher percentage of interns, 82 (38.9%), thinking of it as 'Chaos that needs monitoring' in comparison to third-year students 19 (22.4%). Associations with academic year are presented in Table 4 and Figures 5 and 6.

(b) Among postgraduate students

There was also a significant association between postgraduate speciality and thinking of Facebook as a means of learning endodontics ($\chi^2 = 12.93$, $p = 0.012$), where a significantly higher percentage of students in specialised

endodontic programmes (33.8%) thought of it as 'Chaos that needs monitoring'. A significantly higher percentage of speciality students in non-endodontic programmes (62.7%) thought of it as a form of free speech. Regardless of the speciality, there was a perceived gap between academic teachings and actual practice. Associations with speciality are presented in Table 5.

DISCUSSION

Social media as a source of information does not conform to educational norms since its content is typically created and provided by users for other users [33, 34]. Education as a process is built on the sense of mutual complementary responsibility where the teacher has the larger responsibility to reach their students with accurate information and convey a sense of mastery of the subject, thus stimulating their sense of responsibility to learn [35]. The awareness of such responsibility was an important motive behind the efforts of different endodontic educational institutes to monitor the quality of their process, its evolution and its consistency across different schools [11, 22, 25]. The continuous scrutinising assessment of the educational process is not limited to the curricula but extends to include teachers, facilities, delivery methods, and even the whole pattern of the process [11, 33]. While the 'social cognitive theory' has long been applied to medical

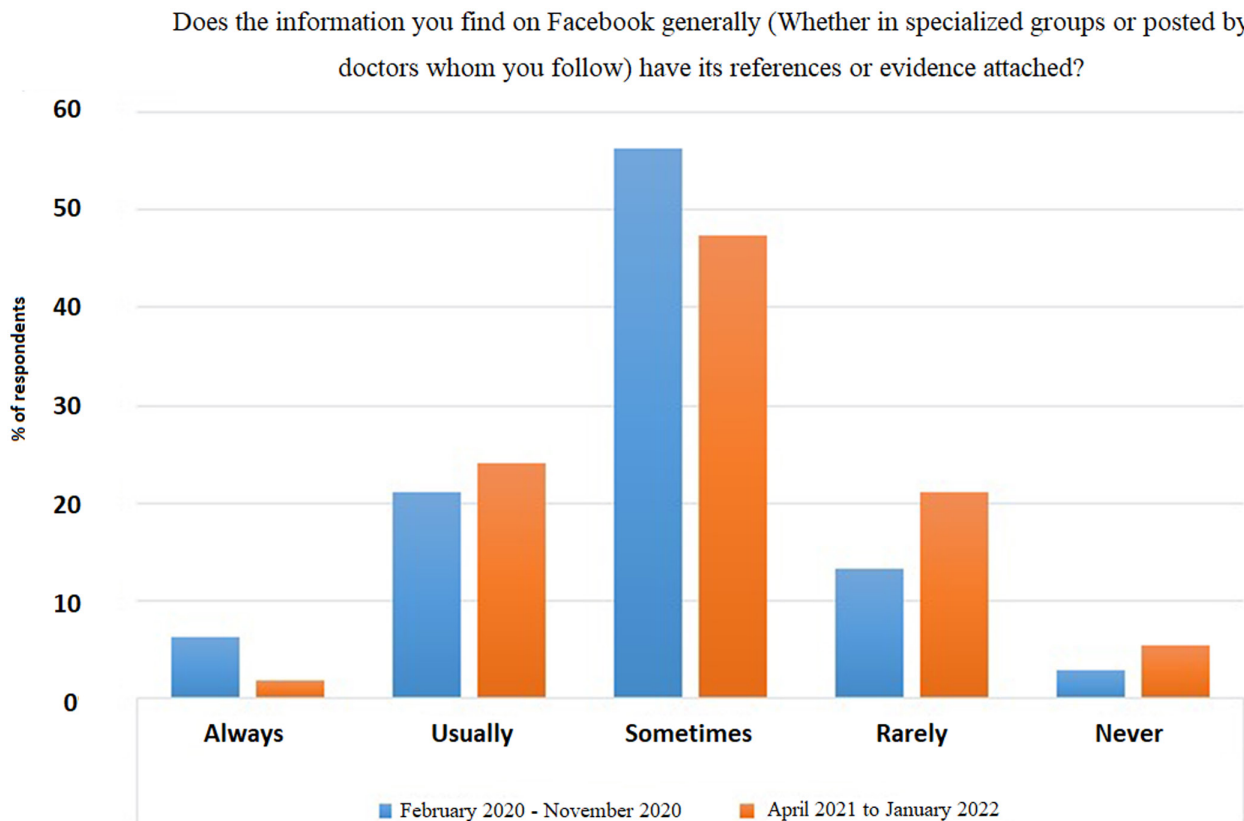


FIGURE 3 Bar chart showing the associations between question 7's answers and response time.

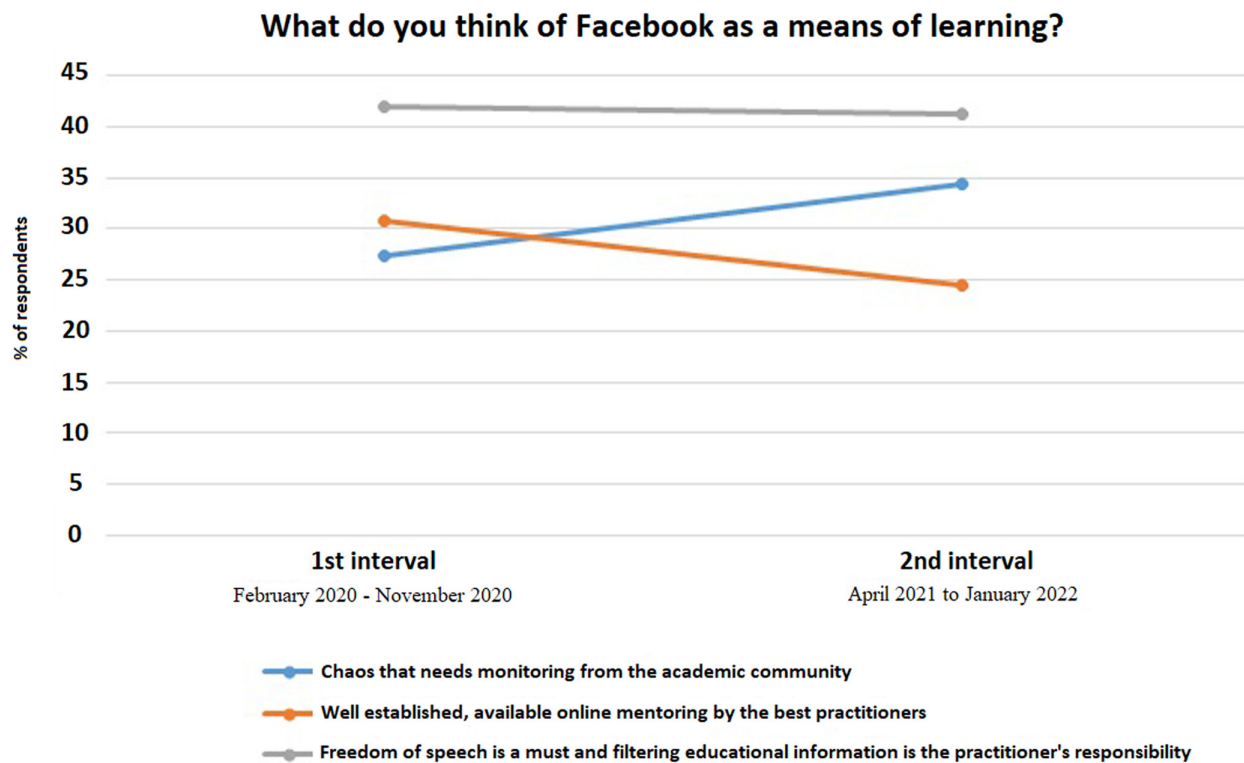


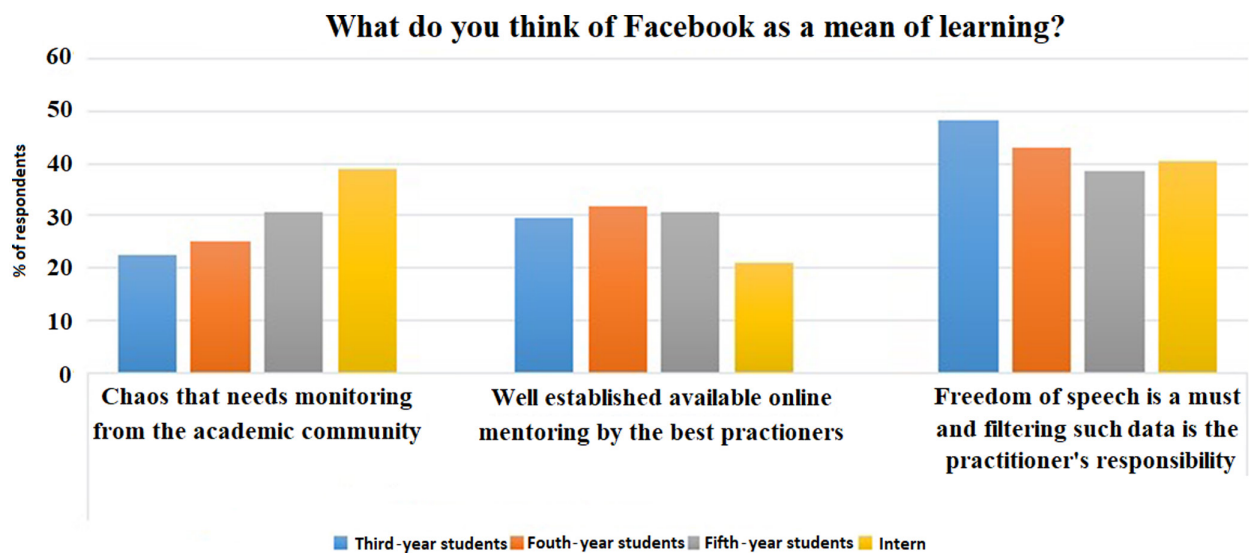
FIGURE 4 Line chart showing the associations between question 16's answers and response time.

TABLE 4 Associations with academic year among Egyptian undergraduate students who have Facebook accounts ($n = 597$).

Question	Answer	Third		Fourth		Fifth		Intern		p-Value
		n	%	n	%	n	%	n	%	
What do you think of Facebook as a mean of learning?	Chaos that needs monitoring from academic community	19 ^B	22.4%	34 ^{AB}	25.2%	51 ^{AB}	30.7%	82 ^A	38.9%	14.20, 0.028 ^a
	Well established available online mentoring by the best practitioners	25 ^A	29.4%	43 ^A	31.9%	51 ^A	30.7%	44 ^A	20.9%	
	Freedom of speech is a must & filtering such data is the practitioners responsibility	41 ^A	48.2%	58 ^A	43.0%	64 ^A	38.6%	85 ^A	40.3%	

Note: Values with different superscript letters within the same horizontal row are significantly different.

^aSignificant ($p \leq 0.05$).

**FIGURE 5** Bar chart showing the associations between question 16's answers and academic year.

education, social media content is different: It escapes assessment processes, and no specific qualifications are necessary for a 'User' to become an 'Educator' other than having a sufficient number of social media followers who admire their clinical talent.

Online delivery of the survey was chosen because of the advantages this method provides in terms of scalability, speed of data collection and cost [25]. The disadvantage of online delivery is the high percentage of non-responses [30]. The risk of non-responses was overcome by frequent sharing of the questionnaire via different platforms at different times. The number of participants increased steadily from the dental student years to the internship. Although this comes in accordance with some social studies that showed a direct correlation between age and interaction rates with surveys [36, 37], it was still a surprising finding given the narrow age range targeted by the survey.

Responses received showed that the vast majority of students of different levels are profoundly engaged with endodontics-related pages or groups and constantly acquire information that they deem beneficial via Facebook. Whether the academic institute of the participant was private- or state-funded was irrelevant to the results, thus excluding the effect of socioeconomic factors and validating the generalisation of the extracted results, at least among Egyptian students.

When questions handling the students' perception of their learning process were analysed, responses showed that most students reported their perception of a gap between their official education and the actual endodontic practice. This perception was generally expected and agreed with other studies that demonstrated how medical students criticise their training, feel unprepared and demand larger supervision, even in countries highly

Decisive criteria upon which participants choose to accept information found on Facebook

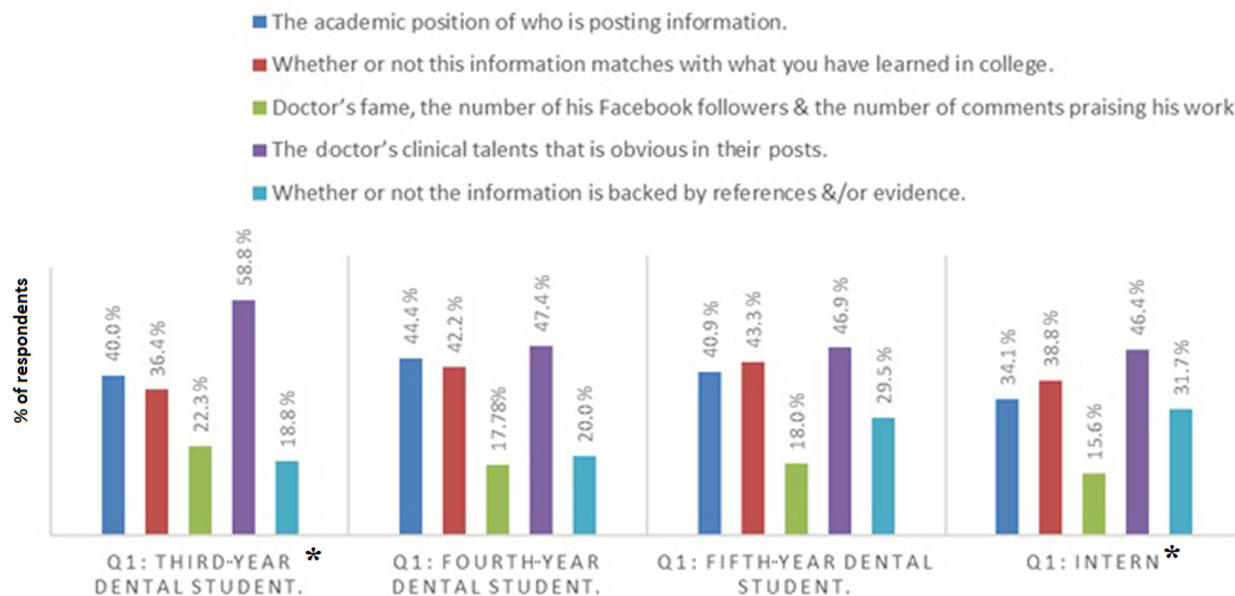


FIGURE 6 Bar chart showing the associations between academic development and participants' selection criteria (Question 11).

regarded for their medical education, such as Germany and the USA [38, 39].

The percentage of participants characterising their incoming information as merely product marketing never reached 15%, that is at least 85% of any selected group gave feedback on learning fundamental concepts and techniques via Facebook. This finding could have raised questions about educational standards if it was not for two factors.

First: In response to the question handling the availability of information during academic education, Question 12: 'Why was the information that you got on Facebook new & learnable to you?' the most popular answer was that the information was more advanced than the participants could digest, while the choice of information unavailability came among the least.

Second: In questions regarding the factors encouraging students to adopt Facebook-delivered information as a collateral source of education, Question 11: 'What are the most decisive criteria upon which you choose to accept information found on Facebook?', the top choices shared by around half the participants were that 'the information was presented on actual clinical cases' and that 'they appreciated the clinical talent showing through the post'.

These two factors highlight the importance of students' desire to see the practical clinical applications of what

they learn performed masterfully by their university educators [35, 39].

A comparison of the responses from the two periods of the survey showed that the results were consistent regarding most of the survey aspects, thus excluding the possibility that the extracted results could have been just circumstantial. It is worth mentioning here that the number of participants in each interval alone surpassed the sample size threshold of the study. Results showed that more students got involved with specialised Facebook groups during the second interval though the increase was not statistically significant. This comes in accordance with Hermida et al [40], who reported that students engaged more on social media platforms during the pandemic. What was interesting to note is that although more students were involved with learning through Facebook in the second time interval, their perception of the quality of the information changed drastically in a negative way, as was evident in the shifts in the number of participants perceiving Facebook as a chaotic source of information and the number of students perceiving the lack of references. This may be attributed to the extra time students had during the lockdown to reflect upon what they read and check if it was supported by evidence. Another critical finding yielded by this study is how the participants value the freedom of speech, thus preferring to be their own 'information

TABLE 5 Associations with specialty among Egyptian postgraduate students.

Question	Answer	Post-grad (Endo program)		Post-grad (other)		χ^2	p-Value
		n	%	n	%		
There is a gap between academic teachings and actual practice?	Agree	47	72.3%	44	86.3%	3.41	0.177
	Disagree	18	27.7%	7	13.7%		
What do you think of Facebook as a mean of learning?	Chaos that needs monitoring from academic community	22 ^A	33.8%	7 ^B	13.7%	12.93	0.012 ^a
	Well established available online mentoring by the best practitioners	11 ^A	16.9%	12 ^A	23.5%		
	Freedom of speech is a must & filtering such data is the practitioners responsibility	32 ^{AB}	49.2%	32 ^B	62.7%		

Note: Values with different superscript letters within the same horizontal row are significantly different.

^aSignificant ($p \leq 0.05$).

filter'. This indicates the difficulties to be tackled by any attempts to regulate social media and comes in accordance with concerns raised by different reports handling relevant issues [41].

The limitations of the present study were that it did not include platforms other than Facebook and limited participation among non-Egyptians. However, within the limitations of this study, we can conclude that students seeking endodontic education consciously find it beneficial to turn to social media as an alternative means of knowledge procurement to fill in what they perceive as gaps between their academic education and the actual practice. Also, most students value the free flow of information and refuse regulation attempts by official associations, syndicates or educational institutes.

Given the nature of the findings of this study, the authors would like to leave no room for misinterpretation or speculation: This article is not a covert advertisement for Facebook or any other social media platform but rather a red flag that endodontic education is not exclusive to the universities. There is an influential parallel platform of education outside of academia. This can easily result in establishing wrong approaches that do not prioritise evidence-based practices, thus disregarding the welfare of the subject targeted by this whole science and its attachments to research and education; the patients.

RECOMMENDATIONS

1. Academic institutes should know their responsibility to reach their students via continuously developing media.

2. While it is impossible to control privately posted data, academic institutes and official syndicates can have active official pages dedicated to students' communication, cases presentation, and reporting false data in an anonymous unbiased manner.
3. Similar surveys need to be done in different populations to assess differences in regional and academic programmes.
4. Academics teaching endodontics should mandatorily mention in their lectures, 'To review the cases on social media with caution, and to discuss with their academic staff new techniques promoted on social media before applying them into their clinical practice'.

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CONFLICT OF INTEREST STATEMENT

The authors deny any conflict of interest.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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