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Original Article

Viewing of clinical cases on social media by dentists: A cause of motivation or dissatisfaction?

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المخلص

أهداف البحث: تقييم أفكار ومشاعر أطباء الأسنان عند مشاهدة الحالات السريرية على مختلف منصات وسائل التواصل الاجتماعي.

طرق البحث: تم تطوير استبانة، تم التحقق من صحته وتأسيس موثوقيته. تم توزيعه (في عام 2022) على 355 طبيب أسنان تخرجوا منذ عامين على الأقل. كان له 3 أقسام تتألف من 20 بندا تتعلق بالمعلومات العامة، واستخدام وسائل التواصل الاجتماعي والمشاعر. تمت الإفادة بالبيانات الوصفية بمساعدة النسب المئوية. تم استخدام اختبار الكاي مربع للتحليل الاستدلالي.

النتائج: كانت نسبة الاستجابة 92%. كانت غالبية المجيبين من غير الحاصلين على درجة الدراسات العليا (63%)، تحت سن 40 سنة (90%) مع خبرة سريرية أقل من 5 سنوات (41%). أطباء الأسنان ذوي الخبرة السريرية الأكثر (15> عاما) كانوا يشاركون أعمالهم السريرية بشكل أكبر بشكل ملحوظ مقارنة بنظرائهم (0.05> ب). معظم أطباء الأسنان لم يشعروا بالتحفيز بعد مشاهدة الحالات السريرية (41%)، خاصة أولئك الذين ينتمون إلى الفئة العمرية أكبر من 40 عاما واعتقدوا أن مشاهدة الحالات السريرية هو السبب في عدم الرضا الشخصي (50%). كان لديهم اعتقاد أن لديهم المهارات (36%) والمعرفة (42%)، ولكن ليس لديهم المعدات اللازمة لتقليد الحالات السريرية (39%).

الاستنتاجات: شعر غالبية أطباء الأسنان أن مشاهدة الحالات السريرية على وسائل التواصل الاجتماعي يمكن أن يسبب عدم الرضا الشخصي وعدم التحفيز. كان لديهم اعتقاد أن لديهم المهارات والمعرفة لتقليد الحالات السريرية، ولكنهم يفتقرون للمعدات. الاستثمار في الموارد في ورش العمل السريرية، والتوجيه والحصول على المعدات الحديثة في وقت مبكر من مهنة أطباء الأسنان قد يحسن من رفاهيتهم النفسية، والرضا وجودة العلاج المقدم للمرضى.

الكلمات المفتاحية: الحالة السريرية، التعلم الإلكتروني لطب الأسنان؛ إحباط؛ تحفيز وسائل التواصل الاجتماعي.

Abstract

Objective: To evaluate the thoughts and feelings of dentists viewing posted clinical cases (PCCs) on various social media (SM) platforms.

Methods: A questionnaire was developed, validated and its reliability was established. It was distributed (in 2022) to 355 dentists who had graduated at least 2 years prior. It had three sections consisting of 20 items pertaining to general information, SM usage, and feelings. Descriptive data were reported using percentages. The chi-squared test was used for inferential analysis. $P \leq 0.05$ was considered statistically significant.

Results: The response rate was 92%. The majority of respondents were non-post-graduates (63%), and aged ≤40 years (90%) with clinical experience <5 years (41%). Dentists with the most clinical experience (>15 years) shared their clinical work significantly more than their

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counterparts ($p < 0.05$). Most of the dentists did not feel motivated after viewing the PCCs (41%), especially those aged >40 years ($p = 0.037$), and thought that viewing the PCCs was the reason for personal dissatisfaction (50%). They had a belief that they possess skills (36%) and knowledge (42%), but not the necessary equipment to replicate the PCCs (39%).

Conclusions: The majority of dentists felt that viewing the PCCs on SM can cause personal dissatisfaction and lack of motivation. They had a belief that they possess the skills and knowledge to replicate the PCCs, but lack equipment. Investing resources in clinical workshops, mentorship, and the procurement of modern equipment early in the career of dentists may improve their mental well-being, satisfaction, and quality of treatment delivered to patients.

Keywords: Clinical case; Dental; E-learning; Frustration; Motivation; Social media

Introduction

According to latest statistics (www.internetworldstats.com), almost 8 billion people have access to the internet worldwide. Global digitalization has led to the increased use of social media (SM) platforms, especially during the last decade.[1] SM is defined as "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, that allows the creation and exchange of user-generated content".[2] The most popular SM platforms include Facebook, Twitter, LinkedIn, YouTube, and Instagram. These platforms provide infinite opportunities to the individuals to connect with each other.

The potential of SM in dentistry is vast and its role has become more critical after the COVID-19 pandemic.[3,4] Contextually, SM platforms are used by dental educators to teach students and peers; dental clinicians to share, view, and discuss clinical cases; and dental researchers to disseminate their findings. It is also used by dental professionals to advertise their practice, share achievements, increase awareness, and provide e-consultation.[1,5–7] Thus, SM enhances the learning opportunities for dental learners by providing a borderless and timeless pathway of interaction with peers and superiors, and helps them improve their problem-solving, networking, and collaborative skills.[8] In essence, SM aids in the professional development of a dentist, especially those belonging to Generation Z.[9]

On the other hand, the use of SM may expose an individual to burnout syndrome.[10] There is growing concern that the increased use of SM may induce depression, mood swings, low self-esteem, and social anxiety disorder.[11–13] Moreover, SM usage may inadvertently lead to social comparison, which can have negative effects on personal wellbeing.[14] In dentistry for instance, the perfectly finished cases and achievements posted by dental professionals may become a source of feelings of envy, incapability, dissatisfaction, and unhappiness for the viewing dentists.[15–17] Interestingly, it has been identified that dental professionals who post their work regularly on SM may have an increased need for social comparison and are more prone to burnout, as the decreased commendation received on the post may advance the dentist towards burnout.[18]

Essentially, this means that SM may exert both positive and negative effects on the user. In reality, it has been observed that dental cases posted online give rise to frustration in a few dentists and motivation in others. However, this relationship and the factors that come into play have not been recognized. Therefore, we investigated the following research question: How do clinical (dental) cases posted on various SM platforms affect the feelings of the viewing dentists? The aim of the current study was to evaluate the relationship between the dental cases posted online and the feelings (personal satisfaction and motivation) and thoughts of the viewing dentists.

Materials and Methods

The current study was a cross-sectional, questionnaire-based study. Ethical approval of the study was received from the ethics committee (Ref No. EC/40/20) of Liaquat College of Medicine and Dentistry (Karachi City, Pakistan). The preliminary sample size was calculated using PASS software version 15 with the help of a previous study[19] as a minimum of 355 participants utilizing its frequency of "daily access to the Facebook" (85%), margin of error (5%), confidence interval (95%), and power of the test (80%). Non-probability purposive sampling technique was used to select the participants, and data were collected over a period of 4 months. The inclusion criteria were dentists who had graduated at least 2 years prior. The exclusion criteria were house officers/interns and dentists who did not understand the English language.

Generation and selection of items of the instrument

Suitable themes for our questionnaire were extracted from previous studies[20,21] by the two authors (JS and TZ). Additionally, three dental educators (AH, NN, and ZK), who are active users of SM platforms and have clinical experience of at least 10 years, were approached to obtain additional themes based on their knowledge and experience. All of the themes identified were merged, listed, and converted to a total number of 24 items by JS. These items were arranged into three sections according to their suitability. Next, the experts were asked to assess each item for the presence of ambiguities, double barreling, negative wording, difficult comprehension, and face validity. They were facilitated online (by JS) in mutually discussing and modifying the items with the aforementioned problems. Briefly, 13 items were modified and 4 items were eliminated. All of the authors conjointly decided that the bipolar Likert scale would be suitable for scaling responses. The Likert scale has a range from −2 (almost never) situated at the left pole to +2 (almost always) situated at the right pole. Between the two poles, 0 is positioned to act

as a neutral midpoint. The final form of the questionnaire comprised 20 items (Appendix I).

Piloting

For the pilot study, the questionnaire was devised using the Kwik survey (https://kwiksurveys.com), and the data were collected online from 30 participants who fulfilled the inclusion criteria and consented to participate in our study. The data were assessed by a biostatistician for reliability using Cronbach's alpha. The reliability of the overall instrument was high (0.838). These data were not included in the data analyses.

Data collection procedure

The data collection of the study was started by online distribution of the self-administered questionnaire link through SM platforms and emails directed to the dental professionals and post-graduate trainees. The questionnaire started with a brief introduction, objective, declaration of anonymity and confidentiality, statement of consent, and notes for filling the questionnaire.

All of the questions/items were close-ended. Section I consisted of single and multiple-choice questions regarding personal and professional information such as age, sex, qualification, experience, and zone of practice. Additionally, this section also consisted of questions related to type, duration, purpose, and time of SM platform usage. Section II consisted of three items related to the professional reasons of SM usage. Section III had eight items regarding the perspectives and feelings experienced upon viewing the posted dental cases. Only the biostatistician had access to the collected data.

The data were analyzed with the help of IBM Social Package for Social Sciences version 27. Mean and standard deviation were reported for numerical variables such as age; and frequencies and percentages were reported for categorical variables such as sex, SM usage pattern, years of experience, area of practice, and purpose of SM usage. The chi-square test was used to assess the difference in feelings and purpose of SM usage according to characteristics of the participants. $P \leq 0.05$ was considered statistically significant.

Results

Of the 355 participants, 327 responded (response rate = 92%). The mean age of participants was 31.7 ± 6 years. Almost half of the total participants (n = 160, 49%) were aged ≤29, and the majority of participants were females (n = 229, 70%). Most participants did not hold a post-graduate qualification, and were not doing any post-graduate course (n = 207, 63.3%). Among the post-graduates, the majority of participants belonged to the clinical sciences specialty (n = 98, 30%). Almost an equal number of participants were practicing in the public (n = 104, 32%) or private sector (103, 31.5%). Nearly 23.5% (n = 77) of the participants were currently not performing clinical procedures anywhere. Most of the participants (n = 134, 41%) had clinical experience of <5 years, whereas, only 8% (n = 26) had clinical experience of >15 years. Interestingly, 17% (n = 56) of the participants did not practice much after graduation (Table 1).

Among the SM platforms, WhatsApp (n = 277, 87%) was used most, followed by Facebook (n = 242, 76%), Instagram (n = 152, 48%), and Twitter (n = 15, 5%). Other platforms used by the participants included Snapchat, LinkedIn, YouTube, Viber, and Telegram. Many participants (n = 126, 38.5%) use SM for personal (or general) reasons, and only 10% (n = 32) of the participants use it for professional purposes (specific to dentistry). A major proportion of the participants use SM at no specific time (n = 206, 64%) followed by nighttime (n = 91, 28%). Additionally, 41.6% (n = 136) of the participants spend 1–3 h, and 13.1% (n = 43) spend more than 6 h on SM daily (Figure 1).

The data analyses in Section II (professional reasons for using SM) revealed that a large number of the participants use SM to learn new clinical techniques (n = 102, 31%) and discuss clinical cases (n = 105, 32%) (Table 2). Although insignificant (p = 0.075), this desire for learning was found to be higher in post-graduate participants (n = 45, 35%) in contrast to non-post-graduates (n = 57, 28.8%). The zone of practice had a significant impact on learning (p = 0.003). Interestingly, the participants practicing in both the public and private sectors were found to be more inclined towards learning the new clinical techniques through SM platforms (n = 18, 41.9%) compared to others. Similarly, participants aged ≤40 years (n = 99, 33.6%), male sex (n = 41, 42%), and those practicing in both the public and private sectors (n = 24, 56%) used SM significantly more to discuss the

Table 1: General Characteristics of the Participants.

Characteristics	n (%)
Age Group	
24–40 years	295 (90.2)
>40 years	32 (9.8)
Sex	
Male	98 (30.0)
Female	229 (70.0)
Post-Graduate	
Non-Post-Graduate[a]	207 (63.3)
Basic Dental Sciences[b]	15 (4.6)
Clinical Dental Sciences[c]	98 (30.0)
Others[d]	07 (2.1)
Zone of Practice	
Private[e]	103 (31.5)
Public	104 (31.8)
Both	43 (13.1)
None	77 (23.5)
Clinical Experience	
No Clinical Experience After Graduation	56 (17.1)
<5 years	134 (41)
5 to 10 years	84 (25.7)
11 to 14 years	27 (8.3)
≥15 years	26 (8)

[a] Dentists holding only a graduate degree (BDS);
[b] Oral pathology, dental materials, oral biology;
[c] Operative dentistry/endodontics/restorative dentistry, orthodontics, oral & maxillofacial surgery, prosthodontics, periodontology, implantology;
[d] Healthcare system management, health profession education, microbiology, hospital Management, public health, anatomy;
[e] Private dental clinics/hospitals.

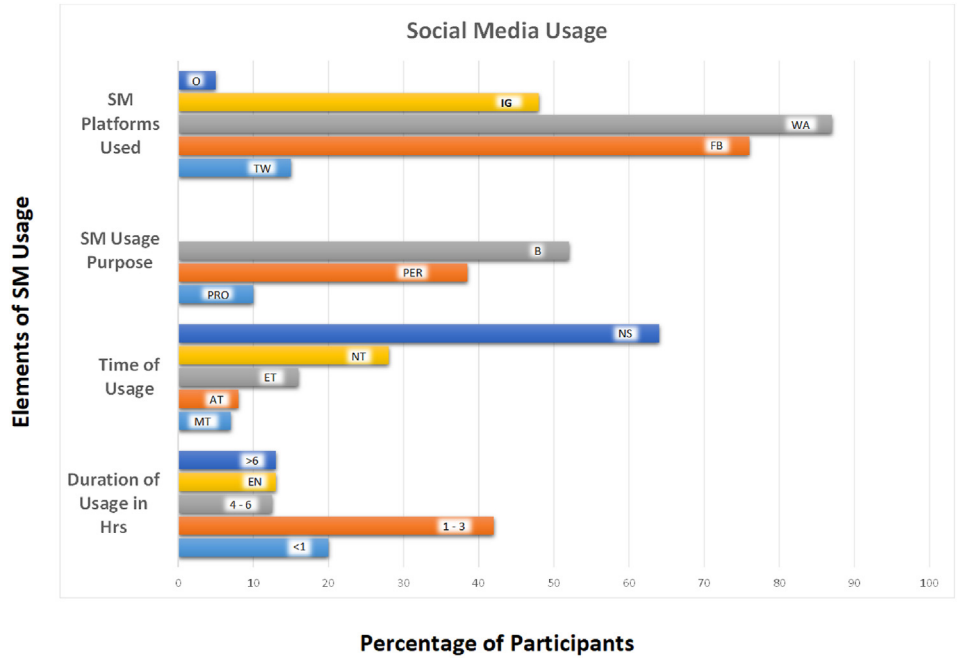

Figure 1: Pattern of social media usage. SM, social media; Hrs, hours; O, others (Snapchat, LinkedIn, YouTube, Viber and Telegram); IG, Instagram; WA, WhatsApp; FB, Facebook; TW, Twitter; B, both; PRO, professional; PER, personal; NS, no specific time; NT, nighttime; ET, evening time; AT, afternoon time; MT, morning time; EN, upon every notification.

posted clinical cases (by other dentists) compared to their counterparts ($p = 0.009$, $p = 0.015$, $p < 0.001$, respectively). Practicing/clinical experience also had a significant impact on interest in discussing clinical cases on SM ($p = 0.026$). It was observed that this interest kept rising as the clinical experience increased to 15 years (11−15 years, 48% [n = 13]; 5−10 years, 33.3% [n = 28]; <5 years, 32% [n = 43]; no experience, 23.2% [n = 13]), and then declined afterwards (>15 years, n = 8, 31%). Only a limited number of participants were found to regularly share their clinical work on SM (n = 71, 22%). Interestingly, the analyses revealed that participants who used SM for the least amount of time (<1 h, n = 22, 34.4%) had the most clinical experience (>15 years, n = 8, 31%), practiced in both the public and private sectors (n = 14, 33%), and shared their clinical work on SM significantly more than other participants ($p < 0.05$).

The descriptive data of Section III showed that viewing/observing the posted clinical cases of other dentists on SM did not motivate most of the participants (n = 135, 41%). The inferential statistics (x^2) revealed a significant difference in motivation ($p = 0.037$) between age groups in this regard. The participants aged >40 years (n = 20, 62.5%) felt less motivated after viewing clinical cases on SM compared to those aged ≤40 years (n = 115, 39%). On the other hand, motivation was not significantly affected by any other independent variable such as sex, usage duration, academic level, practice experience, and zone of practice ($p > 0.05$). The majority of participants never felt disgusted by their own clinical work (n = 201, 61.5%). Surprisingly, among the participants who felt disgusted by their own clinical work, most were males (n = 17, 17.3). None of the independent variables significantly affected the feelings of disgust among the participants ($p < 0.05$). Interestingly, the majority of participants (n = 163, 50%) thought that viewing clinical cases on SM was the reason for professional dissatisfaction (Table 2). Despite having the belief that they possess necessary skills (n = 119, 36.4%) and knowledge (n = 136, 41.6%) to reproduce the clinical procedures shown on SM platforms, most of the participants (n = 129, 39.4%) admitted that they do not have the required equipment (Figure 2). The independent variable that most significantly affected this confession was found to be their level of academia ($p < 0.001$). More post-graduate participants (n = 67, 52%) felt that they lacked the necessary equipment to replicate the clinical cases posted on SM than non-post-graduates (n = 62, 31.3%). Most of the participants (n = 136, 41.6%) think that the PCCs posted on SM is an indication of a clinician's competency. However, the opinions were divided about the notion that such cases represent everyday dentistry (−ve, n = 121, 37%; +ve, n = 108, 33%) (Figure 2).

Discussion

SM platforms are most pertinent to individuals belonging to Generation Z. Connectivism,[22] which is considered a learning perspective for the digital age, highlights the importance of technology and socialization in learning. From a clinical viewpoint, there is limitless information available online, especially in the form of clinical case reports disseminated by clinicians. The posted cases represent scholarship of teaching that promotes learning new techniques and encouraging others to replicate the PCCs. However, viewers of the PCCs may not necessarily get motivated. Rather, in a few instances, they can become disgusted by their own work and feel inferior to others. Therefore practically, the viewers can be divided into three categories based on the psychological impact of viewing

Table 2: Association of Demographic and General Characteristics with Various Themes (Learn, Discuss, Share, Motivation, Dissatisfaction, Disgust).

Characteristics		Learn			Discuss			Share			Motivation			Dissatisfaction			Disgust		
		Responses																	
		−ve	*OO*	*+ve*	*−ve*	*OO*	*+ve*	*−ve*	*OO*	*+ve*	*−ve*	*OO*	*+ve*	*−ve*	*OO*	*+ve*	*−ve*	*OO*	*+ve*
Overall N (%)		80 (24)	145 (44)	102 (31)	89 (27)	133 (41)	105 (32)	133 (41)	123 (38)	71 (22)	135 (41)	85 (30)	107 (33)	52 (16)	112 (34)	163 (50)	201 (61)	89 (27)	37 (11)
Age	*24 to 40*	69 (23)	130 (44)	96 (32.5)	73 (25)	123 (42)	99 (34)	117 (40)	114 (39)	64 (22)	115 (39)	80 (27)	100 (34)	44 (15)	103 (35)	148 (50)	182 (62)	79 (27)	34 (11.5)
N (%)	*>40*	11 (34)	15 (47)	06 (19)	06 (19)	10 (31)	16 (50)	16 (50)	09 (28)	07 (22)	20 (62.5)	05 (16)	07 (22)	08 (25)	09 (28)	15 (47)	19 (59)	10 (31)	03 (9)
	p	*0.198*			*0.009**			*0.447*			*0.037**			*0.317*			*0.837*		
Sex	*M*	25 (25.5)	36 (37)	37 (38)	28 (29)	29 (30)	41 (42)	39 (40)	38 (39)	21 (21)	41 (42)	29 (30)	28 (29)	17 (17)	36 (37)	45 (46)	54 (55)	27 (28)	17 (17)
N (%)	*F*	55 (24)	109 (48)	65 (28)	61 (27)	104 (45)	64 (28)	94 (41)	85 (37)	50 (22)	94 (41)	56 (24.5)	79 (34.5)	35 (15)	76 (33)	118 (51.5)	147 (64)	62 (27)	20 (9)
	p	*0.148*			*0.015**			*0.960*			*0.486*			*0.648*			*0.066*		
Usage duration in hours	*<1*	14 (22)	25 (39)	25 (39)	19 (30)	21 (33)	24 (37.5)	27 (42)	15 (23)	22 (34)	25 (39)	19 (30)	20 (31)	13 (20)	18 (28)	33 (52)	40 (62.5)	17 (27)	7 (11)
	1 to 3	35 (26)	65 (48)	36 (26.5)	41 (30)	53 (39)	42 (31)	59 (43)	54 (40)	23 (17)	50 (37)	40 (29)	46 (34)	21 (15)	42 (31)	73 (54)	74 (54)	48 (35)	14 (10)
	4 to 6	04 (10)	24 (58.5)	13 (32)	06 (15)	23 (56)	12 (29)	12 (29)	22 (54)	7 (17)	14 (34)	10 (24)	17 (41.5)	05 (12)	19 (46)	17 (41.5)	27 (66)	10 (24)	04 (10)
N (%)	*>6*	13 (30)	16 (37)	14 (33)	10 (23)	21 (49)	12 (28)	15 (35)	17 (39.5)	11 (26)	22 (51)	06 (14)	15 (35)	05 (12)	13 (30)	25 (58)	28 (65)	28 (65)	28 (65)
	EN	14 (33)	15 (35)	14 (33)	13 (30)	15 (35)	15 (35)	20 (46.5)	15 (35)	08 (19)	24 (55.8)	10 (23)	09 (21)	08 (19)	20 (46.5)	15 (35)	32 (74)	32 (74)	32 (74)
	p	*0.155*			*0.346*			*0.044**			*0.206*			*0.239*			*0.148*		
Academic Level	*NPG*	57 (29)	84 (42)	57 (29)	56 (28)	85 (43)	57 (29)	81 (41)	78 (39)	39 (20)	79 (40)	56 (28)	63 (32)	31 (16)	69 (35)	98 (49.5)	123 (62)	57 (29)	18 (9)
	PG	23 (18	61 (47)	45 (35)	33 (26)	48 (37)	48 (37)	52 (40)	45 (35)	32 (25)	56 (43)	29 (22.5)	44 (34)	21 (16)	43 (33)	65 (50)	78 (60.5)	32 (25)	19 (15)
N (%)	*p*	*0.075*			*0.278*			*0.504*			*0.504*			*0.959*			*0.261*		
Clinical experience in years	*<5*	29 (22)	62 (46)	43 (32)	35 (26)	56 (42)	43 (32)	44 (33)	56 (42)	34 (25)	46 (34)	36 (27)	52 (39)	24 (18)	45 (34)	65 (48.5)	83 (62)	34 (25)	17 (13)
	5 to 10	15 (18)	42 (50)	27 (32)	15 (18)	41 (49)	28 (33)	34 (40.5)	32 (38)	18 (21)	38 (45)	24 (29)	22 (26)	14 (17)	31 (37)	39 (46)	52 (62)	26 (31)	06 (7)
	11 to 15	09 (33)	10 (37)	08 (30)	05 (18.5)	09 (33)	13 (48)	13 (48)	09 (33)	05 (18.5)	12 (44)	06 (22)	09 (33)	04 (15)	06 (22)	17 (63)	14 (52)	08 (30)	05 (18.5)
N (%)	*>15*	07 (27)	08 (31)	11 (42)	12 (46)	06 (23)	08 (31)	08 (31)	10 (38.5)	08 (31)	15 (58)	02 (8)	09 (35)	05 (19)	10 (38.5)	11 (42)	18 (69)	05 (19)	03 (11.5)
	NE	20 (36)	23 (41)	13 (23)	22 (39)	21 (37.5)	13 (23)	34 (61)	16 (29)	06 (11)	24 (43)	17 (30)	15 (27)	05 (9)	20 (36)	31 (55)	34 (61)	16 (29)	06 (11)
	p	*0.246*			*0.026**			*0.049**			*0.784*			*0.692*			*0.784*		
Zone of practice	*PVT*	22 (21)	46 (45)	35 (34)	26 (25)	38 (37)	39 (38)	38 (37)	41 (40)	24 (23)	43 (42)	27 (26)	33 (32)	17 (16.5)	41 (40)	45 (44)	59 (57)	31 (30)	13 (13)
	PUB	22 (21)	44 (42)	38 (37)	27 (26)	45 (43)	32 (31)	34 (33)	43 (41)	27 (26)	43 (41)	23 (22)	38 (36.5)	18 (17)	32 (31)	54 (52)	68 (65)	25 (24)	11 (11)
	BO	06 (14)	19 (44)	18 (42)	04 (9)	15 (35)	24 (56)	14 (33)	15 (35)	14 (33)	16 (37)	12 (28)	15 (35)	08 (19)	17 (39.5)	18 (42)	28 (65)	11 (26)	4 (9)
N (%)	*NO*	30 (39)	36 (47)	11 (14)	32 (42)	35 (45.5)	10 (13)	47 (61)	24 (31)	06 (8)	33 (43)	23 (30)	21 (27)	09 (12)	22 (29)	46 (60)	46 (60)	22 (29)	9 (12)
	p	*0.003**			*<0.001***			*0.001**			*0.933*			*0.368*			*0.933*		

*Statistically significant ($P < 0.05$); ** Highly significant ($P < 0.001$); M, male; F, female; EN, every notification; NP, non-post-graduate; PG, post-graduate (completed or currently in training); NE, no clinical experience; PVT, private; PUB, public; BO, both; NO, none; −ve, almost never; +, rarely; OO, neutral; +ve, mostly; +, almost always.

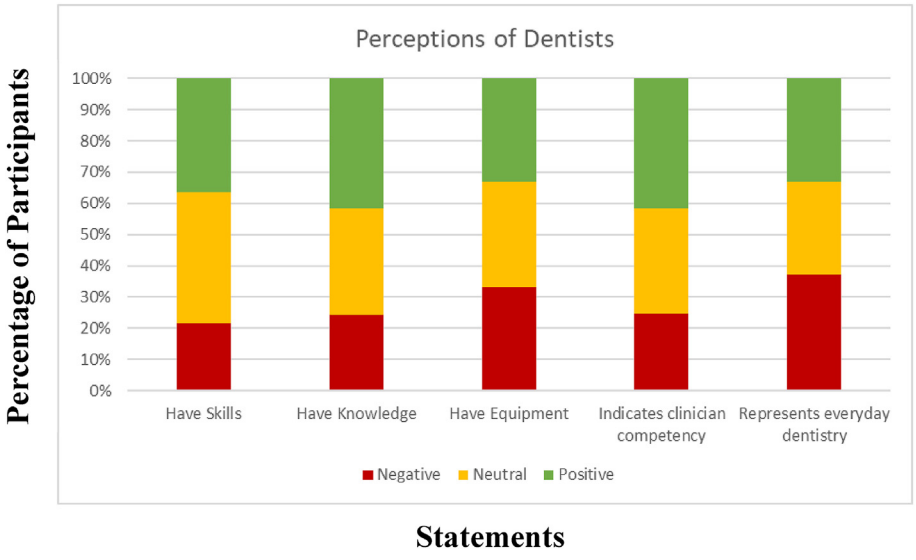

Figure 2: Perceptions of dentists regarding their skills, knowledge and the posted clinical cases. −ve, Almost never; +, rarely; OO, neutral; +ve, mostly +, almost always.

the cases: negatively affected, not affected, and positively affected. Negatively affected implies that viewers may feel dissatisfied with their work, which may lead to dissonance and professional burnout. Positively affected implies that viewers may feel motivated and energized to improve their work. To the best of our knowledge, no previous study has assessed the prevalent perspective and feelings of dentists regarding the clinical cases posted online. Considering the current surge in the sharing of clinical cases on SM, it was necessary for this study to be conducted.

Participants who graduated at least 2 years prior were recruited for this study to standardize the exposure to the outside world after graduation and the clinical experience. Undergraduates are essentially activists and theorists.[23] Practically, they have not gone through enough experience nor can they compare themselves with established clinicians who are posting their cases online. House officers were excluded from study because they are still developing their skill set.

The main findings of our study suggest that the majority of the participants did not feel motivated after viewing the clinical cases on SM platforms. This may be attributed to the fact that most of the participants were non-post-graduates. Post-graduation training transforms students from a "course taker" to a life-long and self-directed learner.[23] In essence, it enhances the ability and motivation to critically reflect and improve their work. Moreover, the online learning and use of technology are more accepted by post-graduates compared to non-post-graduates.[24] This notion was further validated by the finding in our study that post-graduates use SM platforms more to learn new techniques and discuss cases compared to non-post-graduates. The analysis also revealed that most dentists of an older age (>40 years) never felt motivated after viewing the posted clinical cases on SM platforms. For older adults, the learning goals are often less attractive and they have a decreased need for self-regulation.[25] In addition, they may be sufficiently exposed and sensitized to the PCCs in the past or have already achieved some level of perfection. As a result, older adults may feel less stimulated to improve their work just by viewing the cases of others.

Dentists practicing in both the public and private sectors were also more inclined towards using SM platforms for learning and case discussions. These clinicians may see a higher number and diversity of patients compared to those who practice only at a single setup. To be competent and up to par for providing quality treatment to patients, they must keep themselves updated and engage in learning of new clinical techniques.[26]

Interestingly, most dentists in our study thought that the clinical cases posted online are a reason for professional dissatisfaction. There is insufficient evidence in the literature to explain this finding. Many dentists, as per our results, thought that they have the skills and knowledge to replicate the clinical procedures shown on SM platforms, but do not have necessary equipment to do so. An individual who acquires a skill and is ready to apply it in the clinical setting, but is unable to do so because of a limitation, may experience cognitive dissonance.[27] Furthermore, "upward comparison" on SM may also result in feelings of personal dissatisfaction.[15–17] It should also be noted that most dentists in our study were young and inexperienced, and were non-post-graduates. These arguments may explain why the dentists in our study experience personal dissatisfaction and do not feel confident sharing their cases on SM platforms.

Together, these findings suggest that there is a need to educate, train, reassure, and guide young practitioners. Investing human and non-human resources in clinical workshops, apprenticeship, mentorship, and procurement of modern equipment early in the career of the dentists will help improve their mental well-being, self-worth, confidence, personal satisfaction, and quality of treatment delivered to the patients.

This study had some limitations. It was a questionnaire-based study. Therefore the association between various factors could not be established with confidence. Although, our

questionnaire was reliable, the subjective responses provided by the participants may have impacted the results of study. Additionally, most dentists in our study were young and did not have much clinical experience (<5 years). Therefore, the findings cannot be generalized to all cadres of the study population. Future studies should apply a qualitative study design to understand the depth of the problem and identify hidden factors. It is recommended that quantitative researchers apply the current instrument on carefully selected population groups for further validation.

Conclusions

Within the limitations of the study, it can be concluded that the dentists in our study did not feel motivated after viewing the PCCs posted on various SM platforms. They also felt dissatisfied with themselves after viewing them. They thought they have skills and knowledge, but lack the necessary equipment to replicate the clinical cases shown on SM.

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Conflict of interest

The authors have no conflicts of interest to declare.

Ethical approval

This work was approved by the ethics committee (Ref No. EC/40/20), Liaquat College of Medicine and Dentistry, Karachi) in 2020, and subjects provided written informed consent.

Authors' contributions

Conceptualization, J.S., T.Z.; Methodology, J.S., T.Z., A.H., N.N.; Formal analysis, W.F.; Investigation, A.Q.; Data curation, W.F.; Writing—J.S., Z.K., W.F., T.Z.; Original draft preparation, J.S., Z.K., T.Z.; Writing—review and editing, J.S., Z.K., N.N., A.H., Z.K., A.Q.; Visualization, S.A.; Supervision, N.N., A.H., Z.K.; Project administration, J.S.; All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ijhydene.2023.07.282.

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