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An insightful evaluation of professionalism among dentistry students



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KEYWORDS

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Abstract Purpose: The objective of this study was to explore the ambience of professionalism related to academic integrity among undergraduate dental students.

Methodology: “Dundee Polyprofessionalism Inventory I: Academic Integrity” was used to collect responses from first-year to fifth-year dental students of the College of Dentistry, King Saud University (Response rate = 78%). The participants’ responses (for 34 professionalism lapses) were recorded by using the Dundee Polyprofessionalism Inventory. Statistical analysis included descriptive statistics, Chi-square, and T-tests ($P < 0.05$).

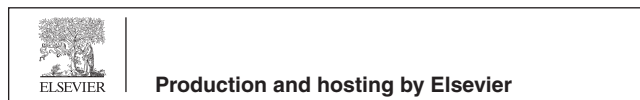
Results: The “Ignore” sanction was not opted for any of the 34 professionalism behaviors, and there was unanimous agreement between the participants in considering all 34 behavior statements to be “wrong”. Male and female participants were found to opt for a similar sanction as the median for 16 statements (47%), whereas, for 18 statements (53%), their responses differed with a range of levels 0.5 to 1.5. Preclinical- and clinical-year student responses also showed similarities in their 11 statements (32.3%), and they did differ for 20 statements (58.8%). Interestingly, clinical year respondents were overall on the stricter side of recommending sanctions.

Conclusions: For the majority of the dental students tested, there was a good understanding of the significance of some lapses of professionalism associated with academic integrity. Some of the disclosures in this study were substantially appreciable because none of the students selected

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“ignore” sanction for any of the survey statements. We found that using the Dundee Polyprofessionalism Inventory for learning and understanding academic professionalism among dental students is useful.

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1. Introduction

Oxford Learner’s Dictionaries define professionalism as “the high standard that you expect from a person who is well trained in a particular job” (Oxford Learner’s Dictionaries, 2020). Professionalism is known as an essential factor in the health care profession and is highly regarded as a key element of clinical competency. According to the American Board of Medical Specialties (ABMS), “Professionalism is a belief system in which group members (‘professionals’) declare (‘profess’) to each other and the public the shared competency standards and ethical values they promise to uphold in their work and what the public and individual patients can and should expect from these professionals” (American Board of Medical Specialties, 2012).

Substantial differences in opinion regarding professionalism in the healthcare context is present. There is a conceptual overlap between professionalism, personal/professional development, and humanism. Moreover, regional likes, dislikes, and differences in opinions can also be found when defining professionalism according to predominant cultural differences (Ho & Al-Eraky, 2016; Cohen, 2007). No universally accepted theoretical settings of professionalism are currently available according to the literature (Ho et al., 2011). Additionally, we cannot agree more with the statement made by Erde (2008), “I do not strive for a clear and unambiguous definition of ‘professionalism’ because I do not believe one is possible” (Erde, 2008). However, various health organizations and foundations agree that academic integrity is an element of professionalism; therefore, wherever the topic, teaching and educational reform is stated and discussed, and both professionalism and academic integrity go hand in hand. The ABIM Monograph on professionalism identifies six broad ingredients of professionalism (altruism, excellence, duty, accountability, honor and integrity, and respect for others) (American Board of Internal Medicine, 1994).

The American Dental Education Association (ADEA) Statement on Professionalism in Dental Education predominantly emphasizes the need to possess and show the highest levels of professionalism and integrity (American Dental Education Association, 2015).

Moreover, dental professionalism is a commitment to a set of values, behaviors, and relationships, which underpins the trust that the public holds in dental care professionals and not that they only have their own self-interests. The knowledge and technical skills necessary for good practice and the interpersonal skills necessary to work together with patients to elicit goals and values to direct proper use of the profession’s specialized knowledge and skills is sometimes referred to as the ‘art’ of medicine (Al-Eraky et al., 2014; Wilkinson et al., 2012; McLoughlin et al., 2017; Zijlstra-Shaw et al., 2013). Therefore, professionalism assures that members have a dynamic formula of personal growth, lifelong learning, and

professional development, including involvement in a social undertaking that continually attempts to express caring and expertise in the work (American Board of Medical Specialties, 2012).

In some parts of the world, the quality of services provided by healthcare practitioners has been declining, which is the evidence of the lack of professionalism (Delivering quality health services, 2018). Professionalism among health care providers varies for different geographic locations and cultures. Various differences are present when defining professionalism based on cultural differences (Jha et al., 2015; Al-Rumayyan et al., 2017). As explained earlier, according to the literature, no universally acceptable theoretical setting of professionalism is available (Li et al., 2017). Therefore, what may be considered professional in the Asian society may not be accepted as professional by patients and community in the African society (Jha et al., 2015). However, efforts are being made to make Professionalism an essential component of the health care professional education system (Stephenson et al., 2001).

What is the significance of this concept in dental education? It is agreed upon that professionalism can be learned, taught, or assessed if clearly elaborated in its local context (Erde, 2008; Jha et al., 2015; Al-Rumayyan et al., 2017). A consensus on the main ingredients of professionalism in dental practice can be defined and must be consistently included throughout the dental educational period (Cruess, 2006). This will provide a permanent basis for teaching, learning, assessing, and, most importantly, acquiring professionalism among the dental practice (Blackall et al., 2007). Thus, it is compulsory that professionalism is incorporated into the dental syllabus in such a way that assists its target population to handle situations arising from violation of the set standards. For the best professional attributes to be imparted among dental students, the first step is to identify the level of student awareness and to know their perception of what is professional and what is not (Ho et al., 2011).

Therefore, the aim of this study was to investigate the ambience of professionalism among undergraduate dental students by using the Dundee Polyprofessionalism Inventory (Roff & Dherwani, 2011). This method is expected to provide a fair understanding of the quality of professionalism as perceived by dental students.

2. Materials and methods

2.1. Study settings

This cross-sectional study was carried out at the College of Dentistry, King Saud University, Riyadh between March 2019 and September 2019. Ethical clearance was provided by the Institutional Review Board (E-18-3564) of King Saud University Medical City.

The information required was collected using the Dundee Polyprofessionalism Inventory I: Academic Integrity (Roff et al., 2015), an anonymous, self-administered, validated English questionnaire with 34 survey statements (Roff et al., 2015). This is one of the few validated scales available to determine academic integrity (Shukr, 2014). The inventory was comprised of 34 questions, which were recorded in two forms: A, using the three Likert scale (Yes, No, and Unsure) and B, if the answer was “Yes” then a further hierarchy of sanctions (Papadakis et al., 2004), i.e., from 1 to 10, was provided to select the recommendation to elaborate the matter of professionalism (Table 1).

All 34 statements had four questions, including; (1) “Is this wrong?”, (2) “Do you think your fellow students do this?”, (3) “Have you ever done this in your present course?”, (4) “Would you ever do this in your present course?”. Additionally, concerning these four questions, participants were given the choice to select from “Yes”, “I Don’t Know”, and “NO”. As shown in Table 3, there were overall recommended responses by undergraduate dental students as the median to 34 lapses in professionalism; hence, the reported results are in agreement with the answers “Yes” for the 1st question (Is this wrong?) and “No” for the subsequent three questions (i.e., (2) “Do you think your fellow students do this?”, (3) “Have you ever done this in your present course?”, (4) “Would you ever do this in your present course?”).

2.2. Study participants

The study participants included students (first year to fifth year) from the College of Dentistry, King Saud University. Student/class leaders made frequent announcements (through the student email system and face to face) regarding this research, and interested students were able to contact the concerned person who discussed all the details of the research survey. Furthermore, a cover letter along with questionnaires describing the instructions, rationale/purpose of the study/consent/timeline/date/venue/potential benefits/potential risks were hand-distributed to a conveniently selected sample of those who were willing to participate. Well before the deadline for collection of the questionnaire, the student leader sent two reminder emails (one week a part) to the participating stu-

dents. First, 200 dentistry students received questionnaires, and 160 returned them after filling them out; out of these, four questionnaires were not included (because they were not completely filled out) in the study. Finally, we included 156 participants’ responses in this study. The response rate was 78%. Of the total 156 agreed participants, 16 (10.3%) were first-year students, 12 (7.7%) were second-year students, 40 (25.6%) were third-year students, 34 (21.79%) were fourth-year; and 54 (34.6%) were fifth-year students. Moreover, of the total participants (n = 156), there were 110 (70.5%) males and 46 (29.48%) females. Regarding the age, the majority of the participants or 130 (83.3%) were 20–24 years of age, and 17 (10.9%) were 25 years, while nine (5.8) were 17–19 years of age. All of the participants were requested to select one answer and fill the numbers where required.

2.3. Data analysis

Data were collected and statistically analyzed using the Statistical Package for Social Sciences, Version 21 (SPSS, Chicago, Illinois, USA). Descriptive and Chi-square tests were used for statistical analysis of the responses at a P-value of <0.05 as the cut-off level of significance.

3. Results

In the College of Dentistry, King Saud University, Riyadh, Saudi Arabia, each year, there are approximately 600 students admitted, from the first to final year to the Bachelor of Dental Surgery Program, and of these 200 students that were initially contacted, 156 agreed to contribute to the present study and completed the survey questionnaire. Therefore, the response rate was 78% (Table 2).

In this study, the participants’ answers showed a median for the suggested endorsements for first time lapses for the 34 different forms of professionalism gaps with no rationalization of circumstances made by undergraduate students in the College of Dentistry. The students did not opt for “ignore” as a recommended sanction for any of the 34 survey statements. Table 3 shows all 34 statements used in the survey with their respective statements of “No”.

Table 4 shows the overall mean recommended responses to the 34 lapses in polyprofessionalism in undergraduate dental students. When asked, “Is this wrong?” (for all 34 statements), there was an agreement between the participants that the behaviors in the 34 statements were “wrong”. The response range was from 50 (32.1%) for Statement No. 5 to 148 (94.9) for two statements, i.e., Nos. 9 and 21.

Table 4 shows the overall median recommended responses to 34 lapses for all participants. There was a trend of consensus among the participants, and the response of “Yes” ranged from 90% and above when participants were asked “Is this wrong?” regarding the following nine statements: Nos. 2, 9, 10, 11, 12, 21, 23, 26, and 28. Among these nine behaviors, the strictest recommend sanction (Table 1) was 10 for the median (“Report to a regulatory body”), which was recorded for the behavior stated in Statement No. 23, whereas the least strict (i.e., 6 was “Failure of specific class/remedial work to gain credit”) was recorded for the behavior in Statement no 9. Among all 34 statements, the most lenient median recommended sanction was 1.5 for the behavior represented by

Table 1 List of recommended sanctions (Papadakis et al., 2004).

Sanction number	Explanation
1	“Ignore (None)”
2	“Reprimand (verbal warning)”
3	“Reprimand (written warning)”
4	“Reprimand, plus mandatory counselling”
5	“Reprimand, counselling, extra work assignment”
6	“Failure of specific class/remedial work to gain credit”
7	“Failure of specific year (repetition allowed)”
8	“Expulsion from college (readmission after one year possible)”
9	“Expulsion from college (no chance for readmission)”
10	“Report to a regulatory body”

Table 2 Demographic Details of the Participants.

Items	Categories	N (%)
Area of study	Dentistry	156 (100)
Age group	17–19	9 (5.8)
	20–24	130 (83.3)
	25 or over	17 (10.9)
Gender	Male	110 (70.5)
	Female	46 (29.48)
Current study year	1st year	16 (10.3)
	2nd year	12 (7.7)
	3rd year	40 (25.6)
	4th year	34 (21.79)
	5th year	54 (34.6)

Statement No. 5, and 32.1% participants agreed that this was wrong.

Table 5 shows a comparison of the median recommended sanctions by participants according to gender and pre-clinical/clinical courses taught at the dental school. There was an agreement between male and female participants regarding the 16 statements (out of the total of 34) because a similar median sanction was found to be recommended from both genders. The remaining 18 statements were found to have a 0.5 to 1.5 level difference for the median recommended sanctions.

Table 5 also lists the 11 behaviors (out of the total 34 lapses in polyprofessionalism) of undergraduate dental students in which the recommended median responses (by pre-clinical and clinical dental students) were similar, and for the rest of the 20 behaviors, their responses differed in the range of 0.5–1.5. There were three behaviors, i.e., Statement Nos. 25, 27,

Table 3 Thirty-four statements included in the (Dundee Polyprofessionalism Inventory I: Academic Integrity) survey.

SS No*	Survey statement
1	“Getting or giving help for course work against a teacher’s rule (e.g. Lending work to another student to look at)”
2	“Removing an assigned reference from a shelf in the library in order to prevent other students from gaining access to the information in it”
3	“Signing attendance sheets for absent friends, or asking classmates to sign attendance sheets for you in labs or lectures”
4	“Drinking alcohol over lunch and interviewing a patient in the afternoon”
5	“Exchanging information about an exam before it has been taken (e.g. OSCE)”
6	“Forging a healthcare worker’s signature on a piece of work, patient chart, grade sheet or attendance form”
7	“Claiming collaborative work as one’s individual effort”
8	“Altering or manipulating data (e.g. adjusting data to obtain a significant result)”
9	“Failure to follow proper infection control procedures”
10	“Threatening or verbally abusing a university employee or fellow student”
11	“Attempting to use personal relationships, bribes or threats to gain academic advantages by e.g. getting advance copies of exam papers or passing exam by such pressures on staff”
12	“Engaging in substance misuse (e.g. drugs)”
13	“Completing work for another student”
14	“Intentionally falsifying test results or treatment records in order to disguise mistakes”
15	“Physically assaulting a university employee or student”
16	“Purchasing work from a fellow student or internet, etc. supplier”
17	“Lack of punctuality for classes”
18	“Providing illegal drugs to fellow students”
19	“Not doing the part assigned in group work”
20	“Examining patients without knowledge or consent of supervising clinician”
21	“Sabotaging another student’s work”
22	“Inventing extraneous circumstances to delay sitting an exam”
23	“Sexually harassing a university employee or fellow students”
24	“Resubmitting work previously submitted for a separate assignment or earlier degree”
25	“Plagiarizing work from a fellow student or publications/internet”
26	“Cheating in an exam by e.g. copying from a neighbour, taking in crib material or using mobile phone or getting someone else to sit for you”
27	“Cutting and pasting or paraphrasing material without acknowledging the source”
28	“Damaging public property, e.g. scribbling on desks or chairs”
29	“Falsifying references or grades on a curriculum vitae or altering grades in the official records”
30	“Involvement in paedophilic activities - possession/viewing of child pornography images or molesting children”
31	“Photographing dissection or prosecution or cadaver materials”
32	“Joking or speaking disrespectfully about bodies/body parts”
33	“Inappropriate representation of Medicine in social media by posting photos/videos/texts about class or clinic activities”
34	“Posting inappropriate material about fellow students, teachers or patients on social media”

* SS No = Survey Statement Number.

Table 4 Overall recommended responses by median to 34 lapses of poly-professionalism among undergraduate dental students (N = 156).

S. No.	Questions				Participants' Recommended Level of sanction	
	Is this wrong? n (%)	Do you think your fellow students do this? n (%)	Have you ever done this in your present course? n (%)	Would you ever do this in your present course? n (%)	Mean (SD)	Median
	YES	NO	NO	NO		
1	67 (42.9)	116 (74.4)	95 (60.9)	69 (44.2)	3.95 (2.15)	4
2	142 (91.0)	93 (59.6)	140 (89.7)	141 (90.4)	7.26 (2.57)	8
3	103 (66)	137 (87.8)	107 (68.6)	80 (51.3)	3.91 (2.66)	3
4	121 (77.56)	67 (42.94)	136 (87.17)	142 (91.10)	6.87 (2.29)	7
5	50 (32.1)	116 (74.4)	97 (62.2)	87 (55.8)	3.14 (2.76)	1.5
6	132 (84.6)	74 (47.4)	129 (82.7)	129 (82.7)	7.03 (2.74)	8
7	125 (80.1)	71 (45.5)	120 (76.9)	124 (79.5)	5.78 (2.66)	6
8	135 (86.5)	54 (34.6)	129 (82.7)	131 (84.0)	6.17 (2.69)	6.5
9	148 (94.9)	89 (57.1)	89 (57.1)	132 (84.6)	5.98 (2.58)	6
10	142 (91)	86 (55.1)	141 (90.4)	144 (92.3)	7.48 (2.35)	8
11	145 (92.9)	89 (57.1)	142 (91)	138 (88.5)	7.98 (2.28)	9
12	141 (90.4)	104 (66.7)	139 (89.1)	139 (89.1)	7.44 (2.58)	8
13	78 (50)	117 (75)	88 (56.4)	63 (40.4)	3.75 (2.51)	3
14	134 (85.9)	71 (45.5)	133 (85.3)	126 (80.8)	6.62 (2.62)	7
15	138 (88.5)	121(77.6)	142 (91)	143 (91.7)	8.05 (2.44)	9
16	111 (71.2)	72 (46.2)	131 (84)	120 (76.9)	5.80 (2.78)	6
17	98 (62.8)	28 (17.9)	61 (39.1)	78 (50)	3.81 (2.45)	3
18	146 (93.6)	126 (80.8)	147 (94.2)	149 (95.5)	8.33 (2.28)	9
19	140 (89.7)	32 (20.5)	115 (73.7)	130 (83.3)	5.45 (2.42)	5
20	97 (62.2)	49 (31.4)	98 (62.8)	97 (62.2)	4.51 (2.95)	4
21	148 (94.9)	97 (62.2)	145 (92.9)	148 (94.9)	7.97 (2.27)	8
22	123 (78.8)	61 (39.1)	115 (73.7)	113 (72.4)	4.71 (2.53)	5
23	147 (94.2)	115 (73.7)	150 (96.2)	149 (95.5)	8.75 (2.01)	10
24	92 (59)	44 (28.2)	104 (66.7)	100 (64.1)	4.94 (2.80)	5
25	134 (85.9)	48 (30.8)	113 (72.4)	124 (79.5)	6.16 (2.73)	6
26	144 (92.3)	37 (23.7)	113 (72.4)	125 (80.1)	7.07 (2.34)	7
27	121 (77.6)	40 (25.6)	101 (64.7)	105 (67.3)	5.07 (2.48)	5
28	144 (92.3)	78 (50)	134 (85.9)	144 (92.3)	6.51 (2.77)	7
29	137 (87.8)	87 (55.8)	139 (89.1)	138 (88.5)	7.00 (2.62)	7
30	139 (89.1)	121 (77.6)	143 (91.7)	142 (91.0)	8.35 (2.58)	10
31	87 (55.8)	64 (41.0)	103 (66)	107 (68.6)	4.72 (2.89)	5
32	130 (83.3)	54 (34.6)	102 (65.4)	117 (75.0)	5.19 (2.86)	5.5
33	100 (64.1)	57 (36.5)	118 (75.6)	113 (72.4)	4.39 (2.69)	4
34	132 (84.6)	75 (48.1)	133 (85.3)	133 (85.3)	5.75 (2.75)	6

and 32, that corresponded to “Plagiarizing work from a fellow student or publications/internet”, “Cutting and pasting or paraphrasing material without acknowledging the source”, and “Joking or speaking disrespectfully about bodies/body parts”). For these three behaviors, the respondents (pre-clinical and clinical dental students) differed in their responses with 2- and 3-level differences. Notably, for these three behaviors, the clinical year students were on the higher/severe side of sanctions on average.

4. Discussion

Breaches in academic principles are a common concern. Nurturing professionalism and proper and prompt remediation of arising lapses among undergraduate students can be challenging due to the level of perception required and the practice background. Dentistry has also been influenced by cultural and political changes, despite arriving at their current profes-

sional status via a somewhat different journey. Historically, dentists have followed the course of barber surgeons and were only recognized as professionals in the late nineteenth and early twentieth centuries; afterwards, the profession moved to a framework more similar to that of medical professionals (Blandy & Lumley, 2000). Dentists eventually were recognized as true professionals, like their medical colleagues, who have social interaction and moral obligations to fulfill regarding their patients (Trathen & Gallagher, 2009).

In this study, we attempted to clarify recommendations regarding sanctions for unprofessional behavior as determined by dental students. The response rate of students (78%) who participated in the study was found to be satisfactory. This assessment was based on information collected using a validated Dundee Polyprofessionalism Inventory (Roff et al., 2015), which has been successfully used by researchers for the assessment of professionalism among health care workers (Shukr, 2014; Sattar et al, 2016; Sattar & Roff, 2016;

Table 5 Comparison of recommended responses by median to 34 lapses of poly-professionalism among undergraduate dental students (among male & female and by pre-clinical & clinical dental students' groups).

S. No.	Male n = 110	Female n = 46	Pre-clinical n = 68	Clinical n = 88
1	4	4	3.5	4
2	8	8	7	8
3	4	3	3	4
4	6.5	8	7	7
5	1	2	1	2.5
6	8	7	8	8
7	6	6	5	6
8	7	6	6	7
9	6	7	5.5	6
10	8	8	7	8
11	9	8	9	8.5
12	8	9.5	8	8
13	3	2	3	3
14	7	8	6.5	7
15	9	9	9	9
16	6	6	6	6
17	3.5	3	3	4
18	9	10	10	9
19	5	6	5	6
20	4	4.5	4	4
21	8.5	8	8	9
22	5	4.5	5	5
23	10	10	10	10
24	5	5	4	5.5
25	6	6	5	7
26	7	7	7	8
27	5	5	4	6
28	7	7	6	7
29	7	7	7	8
30	10	10	10	10
31	5	5	5	5
32	5	6.5	4	7
33	4	4	4	4.5
34	6	5	5.5	6.5

Guraya, 2018; Babelli S et al., 2015). To our knowledge, in this study, this inventory was used for the first time to evaluate professionalism among Saudi dental students.

Using this inventory in dental education has several advantages, unlike in medical education where students are only involved in recording basic information and doing basic examinations; in contrast, dental students are not only involved in doing those activities but also provide final treatment to their patients (Habib et al., 2014). Dental students' interactions with patients start at the beginning of their dental program. During their student years, didactic and psychomotor skills are not the sole factors of their performance. Active listening skills, effective collection of information, communicating and handling emotional patients sensitively, demonstrating empathy with patients, and awareness of patient complaints and demands all comes under the umbrella of Professionalism and are crucial aspects (Sbaraini et al., 2012). Thus, dentistry students must be given the chance to learn about, experiment with, and reflect on their Professionalism early on during their study years so that they become capable of successfully treating their patients during their study years and later on (Taibah, 2018).

To deliver the best possible treatment to their patients, pre-clinical patient simulations and clinical training for dental students are mandatory. Students then add on the basic principles learned in preclinical training, and their learning continues during their interactions with patients in clinics. According to Velayo et al. (2014), preclinical performance is the key to success in clinics for dental students. Thus, it is essential to teach professionalism to dental students during their preclinical training. According to the results of this study, when students in their pre-clinical and clinical years were compared, full agreement on 11 (32.3%) statements (the median response) was recorded with an additional up to 1 level difference in congruence for 18 (52.9%) statements. Such response consistency among the respondents was also reported earlier, but for a different set of eight behaviors (Trathen & Gallagher, 2009). Here, we report an interesting finding as students did not select "Ignore" as a recommended sanction for any of the 34 survey statements. This finding was a notable contrast to results that used the same inventory in the past at various educational institutes for different geographical locations (Trathen Gallagher, 2009; Babelli et al., 2015).

The results also showed a full coherence among the 156 male and female participants for the recommended sanctions for 16 (47%) statements and a coherence of up to one level difference for 15 (44.1%) professionalism lapse items. However, among the male and female participants, there was a considerable response difference of more than one level in the recommended sanctions for three (8.8%) of the lapses, whereas the comparison of responses among students from pre-clinical and clinical years showed a more than one level of difference (median) for the recommended sanctions for professionalism lapses for five (14.7%) statements. Such differences are not unique because the published literature has reported evidence of preceding studies that showed similar stated response variances among students from two health schools in one city (Taibah, 2018). Interestingly, for this study, the response variance reflected the mirror image of most of the items in the inventory. The authors have also reported such response differences between UK, Egyptian, Saudi Arabian, and Pakistani students (Sattar et al., 2016). We believe these differences may be due to the different cultures or variations in the curriculums.

Professionalism evaluations have addressed behavioral and cognitive outcomes (Ryan et al., 2009). In 2012, when the same inventory was used, it was found that 54 Scottish students suggested sanctions for lapses in academic integrity (Roff et al., 2012). Correspondingly, there has been clear apprehension regarding academic integrity that necessitates documentation and solutions. The results of our study are consistent with these findings (Babelli S et al., 2015a; Babelli et al., 2015b).

The most effective and best method of teaching professionalism to dental students is role modelling and personal reflections of the teaching faculty. The general belief held among health care schools is to teach professionalism during all academic years of the program. However, the most important, critical, and influential time for teaching professionalism to dental students has to be in the early years of their studies in dental schools. This study was restricted to discovering the practicality of an inventory to 'map' student considerations of the relative importance of professional lapses by using recommended sanctions. Furthermore, the study results are based on a conveniently selected sample from one dental school, and

the findings cannot be generalized; thus, interpretations of the results should be made with caution. The authors suggest conducting workshops and seminars regularly regarding the importance of professionalism among oral and dental health care providers. This will help increase the awareness of professionalism among future dentists.

5. Conclusions

This study discovered that the environment of professionalism is linked to academic integrity amongst undergraduate dental students. It was determined that the majority of dental students at the King Saud University have a good knowledge and awareness of the importance of breaches of professionalism related to academic honesty. The results of this study are significant because none of the students selected sanction number 1 (i.e., a recommendation of "ignore" towards a professionalism lapse) for any of the survey statements. This shows that the participants in this study do have realization that unprofessionalism behaviors should not to be ignored. Moreover, this ensures the need for academics to plan and foster sound strategy in acquiring robust conservation with proper thoughtfulness for the important educational domain of professionalism.

CRedit authorship contribution statement

Syed Rashid Habib: Conceptualization, Funding acquisition, Methodology, Project administration, Supervision, Writing - review & editing. **Kamran Sattar:** Conceptualization, Methodology, Validation, Visualization, Writing - original draft. **Tauseef Ahmad:** Software, Formal analysis, Validation. **Rana M. Barakah:** Data curation, Writing - original draft. **Abdulaziz M. Alshehri:** Data curation, Writing - original draft. **Abdullah F. Andejani:** Data curation, Writing - original draft. **Abdulrahman A. Almansour:** Data curation, Writing - original draft.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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