

## Medical students' perspective on social media posts in the International Medical University: A preliminary study

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### ABSTRACT

**Background:** Social media is a common channel for communication, information and education. However, it is also a potential forum where lapses of professionalism may occur. In this study we aimed to elicit medical students' perspective on social media practices and their perceived implications of social media posts.

**Methods:** We conducted a cross-sectional study of Semesters 1 and 9 medical students from the International Medical University (IMU). A score was created consisting of the sum of the Likert scale in the 10-item social media practices questionnaire. Categorical variables were compared using chi-square test, while continuous variables that were not normally distributed were compared using Mann-Whitney U test. Statistical significance was set at  $p < 0.05$ .

**Results:** Out of 118 respondents (61% females), 54.2% of them recalled previous instructions regarding the use of social media and 55.1% of them were familiar with the IMU Social Media Guidelines. In general, respondents showed high level of awareness of inappropriate social media practices, with statistically better awareness among Semester 1 students. Students who reported familiarity with IMU Social Media Guidelines were more aware of inappropriate social media practices. Most respondents were aware of the potential adverse impact of social media posts.

**Conclusion:** IMU students who participated in our survey generally had a good grasp of what constitutes inappropriate behaviour on social media and its potential future impact. Lower level of awareness of inappropriate social media practices among the Semester 9 students points to the need for periodic reminders of IMU Social Media Guidelines.

**Keywords:** Medical students, social media, professionalism and medical ethics

### Introduction

Merriam-Webster defined "social media" as "forms of electronic communication (such as websites for social networking and microblogging) through which users create online communities to share information, ideas, personal messages, and other contents (such as videos)".<sup>1</sup> Digital 2020 reported there were approximately 3.8 billion social media users worldwide with 49% penetration; the corresponding figures for Malaysia in January 2020 were 26 million with 81% penetration.<sup>2</sup>

The social media is now ubiquitous, being accessible via a variety of mobile devices, especially the smartphones and tablet computers. The utterances or actions of an individual, when captured in text or images or video, are easily shared with a virtual community. As tech-savvy users transition into professional life, their online presence may not match what is expected from someone of their profession, especially if online social activity had been unconstrained previously. Health personnel have a unique social contract and obligation to be mindful of the public nature of these social media platforms and the permanent nature of postings therein. These sites may give the impression of privacy, but posts and other data should be considered as being in the public realm and freely visible by others.

In 2017, the General Medical Council in the United Kingdom investigated 28 separate cases involving doctors' misuse of social media based on complaints from patients as well as the public.<sup>3</sup> The results of a study done in New York showed that the number of unprofessional content such as identifiable patient information, profanity and depiction of intoxication posted by medical

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students was higher than that of medical faculty.<sup>4</sup> A study carried out among Turkish medical students found that they were unaware of possible ethical implications as the respondents reported no ethical concerns of social media use.<sup>5</sup> A prospective observational study on new residents in the United States found that among interns who had no prior medical school guidance on social media, only 35% of the participants responded correctly regarding communicating with patients on social media whereas among those who had prior medical school instruction, 67% answered correctly.<sup>6</sup> von Muhlen's review documented higher social media usage among medical students compared to clinicians. It concluded that, while the awareness and interest in social media for both personal and professional reasons are evident, there are concerns about potential misuse.<sup>7</sup> Chretien et al surveyed medical schools in United States and found 60% (47 out of 78 schools) reported incidents of students posting unprofessional online content.<sup>8</sup>

In our literature review, we failed to find any Malaysian research investigating medical students' perspective on social media use as it relates to professionalism and medical ethics. Our literature search also did not identify any research comparing medical students' seniority or prior instruction on their perspective on social media issue. An increasing number of healthcare institutions and universities, including the International Medical University (IMU), have published social media guidelines with particular emphasis on the principles of ethics and professionalism. All IMU students are provided with the university's Social Media Guidelines<sup>9</sup> as part of the registration package upon enrolment and they are required to acknowledge having read IMU's Social Media Guidelines in the student declaration form. In this study, we hope to assess medical students' perception and adherence to this guideline.

## Methods

### *Study design, setting and sampling*

A cross-sectional study was carried out between August to September 2019 at the Bukit Jalil and Seremban campuses of the IMU. Our participants were a convenience sample of medical students in Semesters 1 and 9 (representing respectively the new entrants and final year students).

### *Inclusion and exclusion criteria*

All medical students in the Bachelor of Medicine and Bachelor of Surgery programme (MBBS) in Semesters 1 and 9 were eligible (excluding 20 students who took part in our pilot study). MBBS students from Semesters 2 to 8, students who are not enrolled into the MBBS programme and those unwilling to participate in the study, were excluded. Semester 10 students (also in the final year MBBS) who were based in the Batu Pahat and Kluang Campuses were also excluded.

### *Questionnaires*

Our study questions consisted of these three sections:

1. Section 1. Social demographic characteristics
2. Section 2. A 10-item scale describing social medical practices of medical students or health personnel (Table I). These items were developed based on prior research and the IMU Social Media Guidelines.<sup>9</sup> Participants were requested to indicate their opinion as to whether the stated practices were appropriate using a five-point Likert scale (1=totally inappropriate, 3=neutral, 5=totally appropriate).
3. Section 3. A 5-item scale to assess students' opinion on the future impact of inappropriate social medial practices. Participants were requested to indicate

their opinion as to select options using a five-point Likert scale (1=strongly disagree, 3=neutral, 5=strongly agree).

respectively). The study questionnaire was assessed by one content expert on social media and judged to have face validity.

**Questionnaire reliability and validity**

The 10-item social media practice scale and 5-item future impact of social medial posts have acceptable reliability in this study (Cronbach  $\alpha$ =0.873 and Cronbach  $\alpha$ =0.793,

**Table I: 10-item social medial practice**

Item (focus)	Scenarios
Item 1 (Professionalism)	A patient refuses blood transfusion due to religious beliefs, a doctor vents out his feelings and defame the patient’s religion on social media
Item 2 (Professionalism)	A nurse references her fellow colleagues as incompetent on social media
Item 3 (Professionalism)	A doctor posts sexually suggestive content on his social media
Item 4 (Professionalism)	A doctor frequently uses foul language on his social media post
Item 5 (Professionalism)	A doctor participates in a ‘night-out’ with his friends. He snaps a picture of his group of friends indulging in alcoholic beverages
Item 6 (Ethics, privacy)	Friends of a medical student often ‘tag’ him in inappropriate pictures on social media
Item 7 (Ethics, confidentiality)	A lecturer posted an interesting rash on social media because he thought it would be educational without revealing the identity of the patient. However, he did not ask the patient for permission
Item 8 (Ethics, confidentiality)	A doctor charted down private patient information obtained from a social media site in the patient’s medical record without the patient’s knowledge
Items 9 (Professionalism)	A doctor frequently interacts with his patient on social media sites
Item 10 (Professionalism)	A medical student uses social media during clinical work

### **Questionnaire administration**

The printed questionnaires were given to eligible participants before their classes. We stopped the data collection as soon as we achieved the required sample size.

### **Sample size estimate**

In a pilot study of 20 participants, we obtained a difference of social media practice score of 4 points between Semesters 1 and 9 medical students with a standard deviation of 7.21 and 8.54 respectively. Hence, we hypothesise that to detect a difference of 4 points in the social media practice score (using the above standard deviations), we needed to recruit 59 participants in each semester (total sample size was 118).<sup>10</sup>

### **Statistical analysis**

We analysed the data using IBM SPSS Statistical Software version 26. The outcome variable was students' total score on social media practices and individual items in Sections 2 and 3 of our questionnaire. We summed the 10-item social media practices to derive a measure reflecting the perception of inappropriateness of social media practices (lower score reflected more acceptable perception). The individual items and total score in the social media practices were presented as median with 25<sup>th</sup> and 75<sup>th</sup> percentile. Comparison of categorical variables was assessed using chi-square test, while comparison of individual items of Sections 2 and 3, and total score

of social media practices (since they were ordinal data which were not normally distributed) were done using Mann-Whitney U test. Statistical significance was set at  $p < 0.05$ .

## **Results**

### **Response rate and medical student recruitment**

We recruited 118 participants with equal proportion of semester 1 and semester 9 medical students from IMU accounting for 29.8% of Semester 1 students and 80.8% of Semester 9 students as of September 2019. We were able to achieve a response rate of 100% without any missing data.

### **Demographic characteristics and social media behaviour**

Out of the 118 participants, females contributed to 61% which is consistent with the actual gender breakdown of IMU medical students. Only two respondents (1.7%) admitted to not having a social media account. Approximately half (54.2%) of the respondents recalled prior instruction about the use of social media. Only just over half of the respondents (55.1%) reported they were familiar with the IMU Social Media Guidelines; this was statistically significantly more in Semester 1 students when compared to Semester 9 students (Table II).

**Table II: Social media usage and instruction among study participants**

Variables	Semester 1	Semester 9	Total	Statistics*
	n (%)	n (%)	n (%)	
Has a social media account	58 (98.3)	58 (98.3)	118 (98.3)	$\chi^2=0$ 1.00
Received instruction about usage of social media	31 (52.5)	33 (55.9)	63 (54.2)	$\chi^2=0.137$ 0.71
Familiar with IMU Social Media Guideline	40 (67.8)	25 (42.4)	65 (55.1)	$\chi^2=7.707$ 0.01

\*Chi-square test

**Association between perception on social media practices and semester**

The students' perception on the 10-item social media practices were highly skewed in the direction of inappropriateness (see Table III, see also Supplementary

Tables IA and IB in Appendix 1 provide more detail). More Semester 1 students regarded these practices as inappropriate, this achieved statistical significance for eight out of ten items (items 3-10). The median score of Semester 1 students was five point lower than that of Semester 9 students (Mann-Whitney U test,  $p<0.01$ ).

**Table III: Students' perception on the appropriateness of ten social media practices#**

Social media practices	Semester 1* Median (25 <sup>th</sup> , 75 <sup>th</sup> percentile)	Semester 9* Median (25 <sup>th</sup> , 75 <sup>th</sup> percentile)	P value†
Item 1 (Professionalism)	1 (1, 1)	1 (1, 1)	0.61
Item 2 (Professionalism)	1 (1, 1)	1 (1, 2)	0.17
Item 3 (Professionalism)	1 (1, 1)	1 (1, 2)	0.04
Item 4 (Professionalism)	1 (1, 2)	1 (1, 2)	0.02
Item 5 (Professionalism)	2 (1, 3)	3 (2, 3)	0.01
Item 6 (Ethics, privacy)	1 (1, 2)	2 (1, 3)	0.01
Item 7 (Ethics, confidentiality)	1 (1, 2)	2 (1, 3)	<0.01
Item 8 (Ethics, confidentiality)	1 (1, 1)	1 (1, 2)	<0.01
Items 9 (Professionalism)	2 (1, 3)	3 (2, 3)	0.03
Item 10 (Professionalism)	1 (1, 2)	1 (1, 1)	<0.01
Total score, median (25 <sup>th</sup> , 75 <sup>th</sup> percentile)	14 (10, 18)	19 (14, 23)	<0.01

\* Numbers are based on the five-point Likert scale (1=totally inappropriate, 3=neutral, 5=totally appropriate)

† Mann-Whitney U test

#see Appendix 1 for Supplementary Tables IA and IB)

**Association between perception on social media practices and familiarity with IMU Social Media Guidelines**

Students who reported to be more familiar with IMU Social Media Guidelines had lower total social media practices score than those who reported to be not

familiar (15 vs 17, Mann-Whitney U test,  $p=0.03$ , see Table IV). Generally, students who were familiar with this guideline found social media practices items to be more inappropriate; this difference reached statistical significance for five out of ten items (items 2, 3, 5, 6 and 8).

**Table IV: Familiarity with IMU Social Media Guidelines among students**

Social media practices	Familiar Median (25 <sup>th</sup> , 75 <sup>th</sup> percentile)	Not familiar Median (25 <sup>th</sup> , 75 <sup>th</sup> percentile)	P value*
Item 1 (Professionalism)	1 (1, 1)	1 (1, 1)	0.98
Item 2 (Professionalism)	1 (1, 1)	1 (1, 2)	0.04
Item 3 (Professionalism)	1 (1, 1)	1 (1, 2)	0.04
Item 4 (Professionalism)	1 (1, 2)	1 (1, 2)	0.17
Item 5 (Professionalism)	2 (1, 3)	3 (1, 3)	0.03
Item 6 (Ethics, privacy)	1 (1, 2)	2 (1, 3)	0.05
Item 7 (Ethics, confidentiality)	1 (1, 2)	1 (1, 2)	0.67
Item 8 (Ethics, confidentiality)	1 (1, 1)	1 (1, 2)	0.04
Items 9 (Professionalism)	2 (1, 3)	3 (2, 3)	0.12
Item 10 (Professionalism)	2 (1, 2)	2 (1, 3)	0.24
Total score, median (25 <sup>th</sup> , 75 <sup>th</sup> percentile)	15 (11, 20)	17 (13, 22)	0.03

\*Mann-Whitney U test

**Perception of students on the future impact of social media posts**

Most respondents in this study were aware of the future impact of social media posts (Table V). In two out of five items, Semester 1 students were statistically more likely than Semester 9 students to agree about

potential impact of social media posts (Item 3: Posts on social media by medical students or physicians might influence the opinion of potential employers; Item 5: I think that doctors need to be more concerned about the appropriateness of their posts on social media compared to other professions.)

**Table V: Students' perception on the future impact of social media posts#**

Variables	Semester 1* Median (25 <sup>th</sup> , 75 <sup>th</sup> percentile)	Semester 9* Median (25 <sup>th</sup> , 75 <sup>th</sup> percentile)	P value†
Posts on social media might cause potential repercussion in your career	4 (4, 5)	4 (4, 5)	0.37
Posts on social media by medical students or physicians affect the image of the institutions to which they are affiliated	4 (4, 5)	4 (4, 5)	0.30
Posts on social media by medical students or physicians might influence the opinion of potential employers	4 (4, 5)	4 (3, 4)	0.04
I think that medical students need to be more concerned about the appropriateness of their posts on social media	5 (4, 5)	4 (4, 5)	0.87
I think that doctors need to be more concerned about the appropriateness of their posts on social media compared to other professions	5 (4, 5)	4 (4, 5)	0.03

\* Numbers are based on the five-point Likert scale (1=strongly disagree, 3=neutral, 5=strongly agree)

†Mann-Whitney U test

#see Appendix 1 for Supplementary Tables IIA and IIB)

## Discussions

### *Social media usage, instruction and familiarity with IMU Social Media Guidelines*

Almost all students in our study used social media, this is in keeping with data from United States where 90% of young adults (ages 18 to 29) used social media compared to 65% of all adults.<sup>11</sup> Although instruction regarding social media usage was provided as part of the registration package for all students, only approximately half of our respondents recalled this instruction and a similar proportion was familiar with the IMU Social Media Guidelines. It is somewhat expected to find the Semester 1 students were more familiar with the IMU Social Media Guidelines as they were briefed about this more recently.

### *Perceptions of students on inappropriate social media practices*

The students participating in our study showed a relatively high level of awareness of inappropriate social media practices as shown by the median score of 16 (score of 10 is the minimum, lower score reflects more awareness). In general, greater awareness of inappropriate social media practices was found among Semester 1 students and students reporting greater familiarity with IMU Social Media Guidelines. The lower awareness of inappropriate social media practices among the Semester 9 students came as a surprise. We think this is most likely due to the more recent exposure of Semester 1 students to the IMU Social Media Guidelines. However, we cannot discount the possibility of senior students becoming somewhat permissive as they mature in life. This highlights the need for periodic reminder of the potential professional and ethical issues relevant to their social media activities.

Several items in the social media practices in which less than 80% of Semesters 1 or 9 students regarded as somewhat inappropriate may be focus for reminders (see Supplementary Tables IA and IB in Appendix 1). Two of them deserve special mention:

Item 5: A doctor participates in a 'night-out' with his friends. He snaps a picture of his group of friends indulging in alcoholic beverages.

Item 9: A doctor frequently interacts with his patient on social media sites

At first glance, the above two practices appear to be innocuous. In Item 5, there is a suggestion that the friends (presumably medical professional) may be under the influence of alcohol, so posting their images may be construed as disrespecting their privacy. Guidelines from IMU,<sup>9</sup> General Medical Council<sup>12</sup> and American College of Physicians<sup>13</sup> all mentioned the importance of respecting colleagues and ensuring that students' and doctors' actions do not jeopardize the trust of the community. In Item 9, it is generally regarded to be important to maintain a professional relationship with our patients. IMU Social Media Guidelines stated: "Interactions with patients within these sites are strongly discouraged. This provides an opportunity for a dual relationship, which can be damaging to the doctor-patient relationship, and can also carry legal consequences".<sup>9</sup> Guidelines from the General Medical Council<sup>12</sup> and American College of Physicians<sup>13</sup> also highlighted the need to maintain boundaries with our patients.



### ***Perception of students regarding future impact of social media posts***

In general, the respondents in this study were aware of the potential future impact of social media posts. Interestingly, we found Semester 1 students were somewhat more aware than Semester 9 students regarding several items with regards to the future impact of social media post. However, we noted two items where items where a substantial proportion of students have lower than expected agreement.

1. "Posts on social media might cause potential repercussion in your career." Both groups of students have less than 80% agreement (agree or strongly agree to the statement).
2. "Posts on social media by medical students or physicians might influence the opinion of potential employers." Semester 9 students have less than 80% agreement (agree or strongly agree to the statement).

Again, the reminder of students regarding the above potential future impact of social media posts with regards to the above two situations are needed, perhaps using actual case studies from the local context where possible.

### ***Study limitations***

We wish to highlight several limitations in our study. Firstly, our questionnaire has not been formally validated prior to the study (although it is reassuring to note that Sections 2 and 3 have acceptable reliability when assessed using our current survey data). Secondly,

while the perception of the study participants generally showed acceptable awareness of the inappropriate social media practices and potential impact of such activities, we cannot discount the possibility of social desirability bias. Thirdly, our questionnaire measured only opinions and may not correlate with their actual social media practices, the latter are much more difficult to capture. Finally, the respondents were limited to a convenient sample of Semesters 1 and 9 students, and therefore, the results may not be representative of all IMU medical students.

### **Conclusion**

Semesters 1 and 9 medical students in this study showed acceptable level of awareness of inappropriate social media practices and know about the future impact of these activities. Some gaps in selected items were identified, especially among the Semester 9 students. Further reminder of the IMU medical students on social media as it relates to professionalism and medical ethics is warranted.

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## REFERENCES

1. Merriam Webster Online Dictionary. Access 7 Dec 2020. <https://www.merriam-webster.com/>
2. Digital 2020: Malaysia. DataReportal – Global Digital Insights. Accessed 7 Dec 2020. <https://datareportal.com/reports/digital-2020-malaysia?rq=malaysia>
3. Rimmer A. Doctors' use of Facebook, Twitter, and WhatsApp is the focus of 28 GMC investigations. *BMJ*. 2017 Sep 1;358:j409.
4. Kitsis E, Milan F, Cohen H, Myers D, Herron P, McEvoy M et al. Who's misbehaving? Perceptions of unprofessional social media use by medical students and faculty. *BMC Med Educ*. 2016;16:67
5. Avcı K, Çelikden SG, Eren S, Aydenizöz D. Assessment of medical students' attitudes on social media use in medicine: a cross-sectional study. *BMC Med Educ*. 2015 1;15:18.
6. Lefebvre C, Mesener J, Stopyra J, et al. Social media in professional medicine: new resident perceptions and practices. *J Med Internet Res*. 2016;18:119.
7. von Muhlen M, Ohno-Machado L. Reviewing social media use by clinicians. *J Am Med Inform Assoc*. 2012;19:777-81.
8. Chretien KC, Greysen SR, Chretien J, Kind T. Online posting of unprofessional content by medical students. *JAMA*. 2009;302:1309–15.
9. Social Media Guidelines for IMU Students. Bukit Jalil: International Medical University; 2020. Accessed 8 Jan 2020. <http://imu.edu.my/imu/wp-content/uploads/Social-Media-Guidelines-Students.pdf>
10. Dean AG, Sullivan KM, Soe MM. OpenEpi: Open Source Epidemiologic Statistics for Public Health, Version. [www.OpenEpi.com](http://www.OpenEpi.com), updated 2013/04/06, accessed 2020/12/08.
11. Perrin A. Social Media Usage: 2005-2015. United States: Pew Research Center; October 2015. Accessed 8 Dec 2020.
12. General Medical Council. Doctors' Use of Social Media. London: General Medical Council; 2013
13. Farnan JM, Snyder Sulmasy L, Worster BK, et al. Online medical professionalism: patient and public relationships: policy statement from the American College of Physicians and the Federation of State Medical Boards. *Ann Intern Med*. 2013;158:620-7. doi: 10.7326/0003-4819-158-8-201304160-00100.

Appendix 1

Supplementary Tables IA and IB

Supplementary Table IA:

Semester 1 students' perception on the appropriateness of ten social media practices

Items	Totally inappropriate n (%)	Inappropriate n (%)	Neutral n (%)	Appropriate n (%)	Totally inappropriate n (%)	Median (25 <sup>th</sup> , 75 <sup>th</sup> percentile)
Item 1	51 (86.4)	5 (8.5)	2 (3.4)	1 (1.7)	0 (0)	1 (1, 1)
Item 2	45 (76.3)	10 (16.9)	2 (3.4)	2 (3.4)	0 (0)	1 (1, 1)
Item 3	53 (89.8)	2 (3.4)	4 (6.8)	0 (0)	0 (0)	1 (1, 1)
Item 4	41 (69.5)	14 (23.7)	2 (3.4)	2 (3.4)	0 (0)	1 (1, 2)
Item 5	26 (44.1)	11 (18.6)	19 (32.2)	1 (1.7)	2 (3.4)	2 (1, 3)
Item 6	35 (59.3)	15 (25.4)	8 (13.6)	1 (1.7)	0 (0)	1 (1, 2)
Item 7	43 (72.9)	10 (16.9)	5 (8.5)	1 (1.7)	0 (0)	1 (1, 2)
Item 8	52 (88.1)	7 (11.9)	0 (0)	0 (0)	0 (0)	1 (1, 1)
Items 9	22 (37.3)	13 (22.0)	15 (25.4)	7 (11.9)	2 (3.4)	2 (1, 3)
Item 10	39 (66.1)	13 (22.0)	6 (10.2)	1 (1.7)	0 (0)	1 (1, 2)

Supplementary Table IB:

Semester 9 students' perception on the appropriateness of ten social media practices

Items	Totally inappropriate n (%)	Inappropriate n (%)	Neutral n (%)	Appropriate n (%)	Totally inappropriate n (%)	Median (25 <sup>th</sup> , 75 <sup>th</sup> percentile)
Item 1	49 (83.1)	6 (10.2)	3 (5.1)	1 (1.7)	0 (0)	1 (1, 1)
Item 2	39 (66.1)	10 (16.9)	8 (13.6)	2 (3.4)	0 (0)	1 (1, 2)
Item 3	44 (74.6)	8 (13.6)	6 (10.2)	1 (1.7)	0 (0)	1 (1, 2)
Item 4	30 (50.8)	15 (25.4)	12 (20.3)	1 (1.7)	1 (1.7)	1 (1, 2)
Item 5	14 (23.7)	11 (18.6)	23 (39.0)	10 (16.9)	1 (1.7)	3 (2, 3)
Item 6	22 (37.3)	15 (25.4)	20 (33.9)	2 (3.4)	0 (0)	2 (1, 3)
Item 7	25 (42.4)	18 (30.5)	10 (16.9)	6 (10.2)	0 (0)	2 (1, 3)
Item 8	34 (57.6)	20 (33.9)	5 (8.5)	0 (0)	0 (0)	1 (1, 2)
Items 9	9 (15.3)	13 (22.0)	29 (49.2)	7 (11.9)	1 (1.7)	3 (2, 3)
Item 10	12 (20.3)	19 (32.2)	21 (35.6)	4 (6.8)	3 (5.1)	2 (2, 3)

**Supplementary Tables IIA and IIB**

Items in the questionnaire:

1. Posts on social media might cause potential repercussion in your career
2. Posts on social media by medical students or physicians affect the image of the institutions to which they are affiliated
3. Posts on social media by medical students or physicians might influence the opinion of potential employers
4. I think that medical students need to be more concerned about the appropriateness of their posts on social media
5. I think that doctors need to be more concerned about the appropriateness of their posts on social media compared to other professions

**Supplementary Table IIA:**

**Semester 1 students' perception on the future impact of social media posts**

Items	Strongly disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly agree n (%)	Median (25 <sup>th</sup> , 75 <sup>th</sup> percentile)
Item 1	0 (0)	1 (1.7)	11 (18.6)	27 (45.8)	20 (33.9)	4 (4, 5)
Item 2	0 (0)	0 (0)	9 (15.3)	33 (55.9)	17 (28.8)	4 (4, 5)
Item 3	0 (0)	2 (3.4)	8 (13.6)	29 (49.2)	20 (33.9)	4 (4, 5)
Item 4	0 (0)	1 (1.7)	8 (13.6)	20 (33.9)	30 (50.8)	5 (4, 5)
Item 5	1 (1.7)	0 (0)	6 (10.2)	20 (33.9)	32 (54.2)	5 (4, 5)

**Supplementary Table IIB:**

**Semester 9 students' perception on the future impact of social media posts**

Items	Strongly disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly agree n (%)	Median (25 <sup>th</sup> , 75 <sup>th</sup> percentile)
Item 1	1 (1.7)	3 (5.1)	9 (15.3)	31 (52.5)	15 (25.4)	4 (4, 5)
Item 2	2 (3.4)	3 (5.1)	3 (5.1)	27 (45.8)	24 (40.7)	4 (4, 5)
Item 3	2 (3.4)	5 (8.5)	11 (18.6)	28 (47.5)	13 (22.0)	4 (3, 4)
Item 4	0 (0)	0 (0)	6 (10.2)	26 (44.1)	27 (45.8)	4 (4, 5)
Item 5	1 (1.7)	1 (1.7)	9 (15.9)	28 (47.5)	20 (33.9)	4 (4, 5)