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Undergraduate physical therapy students' attitudes towards using social media for learning purposes at King Saud University, Saudi Arabia

Afaf A. M. Shaheen[1,2*] ⓘ, Fatim F. Alanazi[2], Lama B. Alrashid[2], Raghad A. Almadani[2], Shaden S. Altamrah[2], Shahad Z. Almusallam[2], Syamala Buragadda[2] and Ganeswararao Melam[2]

Abstract

Background: Social media has become an almost essential part of daily life, especially among college students. The wide use of social media by students makes it an attractive tool for educational institutions. Therefore, this study aimed to ascertain physical therapy (PT) students' attitudes towards using social media for learning purposes, assess the differences in attitudes between genders, and assess the benefits of using social media in the learning process. In this descriptive cross-sectional study, data were collected from 158 undergraduate PT students at King Saud University (KSU) University in Riyadh using a custom self-reported questionnaire.

Results: Results indicate that, in general, PT students have positive attitudes towards using social media platforms for learning purposes. YouTube, Wikis, WhatsApp, and Twitter have been utilized for learning purposes by 82.9%, 44.3%, 30.4%, and 27.4% of the students, respectively. Furthermore, students favorably reported that social media platforms are better than traditional teaching methods. These platforms facilitate finding educational resources, develop writing, listening and social skills, share knowledge, enhance self-independent learning, increase collaborations, and develop creativity.

Conclusion: This study showed that PT students, both males and females, have positive attitudes towards using social media platforms. It is convenient to use social media platforms for learning purposes. It may help enhance the quality of the students' learning experience and academic performance.

Keywords: Attitudes, Benefits, Learning purposes, Physical therapy students, Social media, Saudi Arabia

Background

Social media and web-based social networks (SNSs) are online services or sites that are based on encouraging the social relations among people who may share interests, activities, upbringings, or real-life connections. They became an integral part of young people's lives worldwide with larger use among adolescents, high school students, and undergraduates [1–3]. There is growing evidence that using social media is increasingly embedded on the daily basis particularly for young people to foster the links between friends and colleagues.

Social media became a valuable resource to support the students' educational communications and collaborations with their faculties [4–6]. It is used in education to enhance learning by allowing social interactions, active participation, engagements of students in classroom discussions, and communication (blended/online courses and social media solutions). Facebook and Twitter grew seriously integrating with different applications focusing on knowledge, information, instruction, or training. In addition, social media changed students' information-seeking behaviors and

* Correspondence: afaf_pt@yahoo.com
[1]Department of Basic Sciences, Faculty of Physical Therapy, Cairo University, 7 Ahmed Elziat St, Giza, Egypt
[2]Department of Rehabilitation Health Sciences, College of Applied Medical Science, King Saud University, Riyadh, Saudi Arabia

enlisted as potential applications for teaching and learning [1, 3].

According to Global Media Insight, the first digital agency in the Middle East, last year's social media statistics revealed that the number of internet consumers in Saudi Arabia (SA) rose rapidly to 30 million people by the beginning of 2018. The internet penetration in the country has now reached 91%. Thus, SA is now a country that tops the entire world in using numerous social media platforms with the highest annual growth rate of social media users anywhere in the world. It has one of the highest number of users on Twitter, with 3 million increase of users from 2019 to 2020 [7].

The use of the internet has made the access to learning materials easy and affordable. The universities in SA have started using social media platforms in the teaching and learning processes. Therefore, the education sector in SA has integrated using information and communication technology (ICT) in the learning process to make education more effective. This integration increased the capacity of accessing information and ICT which promotes academic quality [8].

Gender appears to be one of the essential factors in determining the choice in social media platforms and the utilization of educational technology. Previous studies had concluded that males and females varied in their motivation and utilization of time spent online [9, 10].

Numerous studies have explored different aspects of using social media platforms by undergraduate, health sciences, and medical students worldwide [1–3, 5, 6]. However, limited information exists on how physical therapy (PT) students utilize social media; is it for educational or strictly social purposes? In addition, the findings of the previous studies concerning university students' attitudes towards the benefits and effects of social media on their academic achievements were inconsistent [11–14]. Few studies reported positive effects of using social media, and conversely some studies reported decline in academic performance [14, 15].

Although few studies reported the use of social media in education among medical students in SA [3, 16, 17], no studies have been reported to investigate PT students' attitudes towards using social media for learning purposes. Therefore, this study aimed to ascertain PT students' attitudes towards using social media for learning purposes, assess the differences in attitudes between genders, and assess the benefits of using social media in learning process

Methods
Design and setting
In this descriptive cross-sectional study, 158 undergraduate PT students were recruited randomly from the PT program, Department of Rehabilitation Health Sciences, College of Applied Medical Sciences (CAMS), King Saud University (KSU), Riyadh, SA, from March to August 2019

Participants
Out of 260 students enrolled in the bachelor degree of PT program at both male and female campus, 158 students were recruited using stratified random sampling method based on to their academic level. The students from academic levels four up to eight were invited to participate in the study. Their ages ranged from 18 to 24 years. Postgraduate PT students and students from other programs or other universities were excluded from the study. The study was approved by the institutional review board of CAMS, King Saud University with reference number CAMS E-19-3767. All participants signed a consent form elaborating the aims and procedure of the study before participating.

Calculation of sample size
The power of the sample size was calculated using 95% confidence interval and 5% margin of error. The sample size was calculated using Slovin's formula [18]. The required sample size equals $n = N \div (1 + Ne^2)$ people, where n = number of samples, N = Total population, and e = error tolerance. Thus, $n = N/(1 + Ne2) = 260/[1 + (260 \times ((0.05)2)] = 260/1.6 = 158$.

Procedure
The eligible students were asked to complete an online questionnaire. It was available to them via a bulk email to student email accounts, Twitter, Facebook, short message service, and an announcement through the university's learning management system, the typical mode of communication between students and faculty. Confidentiality and anonymity were assured for the students before they completed the questionnaire.

Instrumentation
Since no validated questionnaire suited the purposes of this study, a custom self-reported questionnaire was designed based on the literature review. The questionnaire contained clear and simple questions that enable the students to provide accurate information.

The self-reported questionnaire consisted of 19 questions of five sections: (1) demographic information (gender, age, academic level, grade point average (GPA), and whether they use computer and smart phones), (2) one question concerning about the experience with social media platforms, (3) five questions on social media use, (4) six questions on attitudes towards using social media to support learning, and (5) one question about the benefits of social media for learning. Various response types were utilized including multiple-choice options, five-point Likert scales, and free text (Additional file 1).

The designed questionnaire was distributed to eight experts in the field of PT to test face and content validity using content validity index (CVI). A CVI value was calculated for each item on a scale (I-CVI) as well as the

overall scale (S-CVI) [19]. Experts were asked to rate the relevance of each item to calculate an item-level CVI (I-CVI) using a 4-point scale: 1 = not relevant, 2 = somewhat relevant, 3 = quite relevant, and 4 = highly relevant. Then, for each item, the I-CVI was calculated as the number of experts giving a rating of either 3 or 4 divided by the number of experts. The proportion reveals the agreement about relevance [19]. The items rated 1 and/or 2 were removed or replaced. This process continued until all experts agreed that the items' content of the final version of the questionnaire was valid.

This helped the researchers to assess the quality of each item in the context of clarity, ambiguity, and generality of all items of the questionnaire. The committee made minor changes to the 4th item in section one. They suggested to mention GPA in both letters and numerical. Furthermore, they recommended using various response types according to the type of question asked. Their assessment and recommendations helped the researcher contentment that the questionnaire is appropriate and valid for the research.

The internal consistency was computed to determine the reliability of the questionnaire. Fifty copies of the questionnaire were distributed to the randomly selected PT students. Their responses to the questionnaire items were calculated to obtain Cronbach's alpha coefficient (0.83), which indicates the internal reliability of the questionnaire.

Statistical analysis
SPSS version 21.0 (IBM Corp., Armonk, USA) was used for data analysis. The data were expressed as frequencies and percentages.

Results
Students' demographic characteristics
All students completed the questionnaire with a response rate of 100%. The majority (82.9%) were between 20 and 24 years with higher percentage in male students (88.6%) (Table 1). All of them reported that they use smart devices, and 97.5% have computers at home.

Experience with social media platforms
There was a variability in the students' experiences with social media platforms. About 79.1% of PT students had the best experiences with WhatsApp, followed by Instagram (58.9%), YouTube (58.2%), and Twitter (47.5%) (Table 2). The results demonstrated that female students have the best experiences with WhatsApp (81% vs 77.2%), Instagram (63.3% vs 54.4%), YouTube (60.8% vs 55.7%), and Twitter (58.2% vs 36.7%).

Uses of social media
The findings revealed that 63 males (79.7%) and 66 females (83.5%) reported that they always use social media

Table 1 Demographic characteristics of the sample

Characteristics	Males	Females	Total
Gender	79 (50%)	79 (50%)	158 (100%)
Age (years)			
18 to less than 20	9 (11.4%)	18 (22.8%)	27 (17.1%)
20 to less than or equal 24	70 (88.6%)	61 (77.2%)	131 (82.9%)
Level of study (academic level)			
Level 4	18 (22.8%)	22 (27.8%)	40 (25.3%)
Level 5	6 (7.6%)	6 (7.8%)	12 (7.6%)
Level 6	9 (11.4%)	13 (16.5%)	22 (13.9%)
Level 7	11 (13.9%)	8 (10.1%)	19 (12.0%)
Level 8	35 (44.3%)	30 (38.0%)	65 (41.1%)
GPA			
A+	5 (6.3%)	5 (6.3%)	10 (6.3%)
A	13 (16.5%)	31 (39.2%)	44 (27.8%)
B+	15 (19.0%)	25 (31.6%)	40 (25.3%)
B	23 (29.1%)	15 (19.0%)	38 (24.1%)
C+	14 (17.7%)	3 (3.8%)	17 (10.8%)
C	5 (6.3%)	0 (0%)	5 (3.2%)
D+	3 (3.8%)	0 (0%)	3 (1.9%)
D	1 (1.3%)	0 (0%)	1 (0.6%)

Data are represented as frequency and percentage. GPA: grade point average

platforms. Snapchat was the most used social media platform on a daily basis among 134 (84.8%) with lower percentage of males (83.5%) compared to females (86.1%). Meanwhile, only 7 (4.4%) students used video teleconferencing, e.g., Skype (Table 3). About 83 (52.5%) students, 45 males (57.0%) and 38 females (48.1%), spend more than 3 h a day online (Table 4).

Almost all of the students (153, 96.8%), 76 males (96.2%) and 77 females (97.5%), noted that they "always," "often," and "sometimes" use social media and social network for learning purposes (Table 5). Table 6 illustrated that YouTube, Wikis, WhatsApp, and Twitter were the preferred social media platforms for learning purposes by 131 (82.9%), 70 (44.3%), 48 (30.4%), and 43 (27.4%) of the PT students, respectively. Specifically, the results revealed that female students preferred YouTube (92.4% vs 73.4%), while Twitter and Wikis are the preferred social media platforms among males (30.4% vs 24.1% and 45.6% vs 43.0% respectively). They equally use WhatsApp (30.4%).

Attitudes towards using social media to support learning
About 142 (89.9%) students, with equal percentages in both genders (89.9%), found that using social media for learning purposes is convenient. When asked if they attended a class where the instructor used social media in his/her teaching, 33 students (20.9%)—17 males (21.5%) and 16 females (20.3%)—said "always." Forty-four students (27.8%)—25 males (31.6%) and 19 females

Table 2 Students' experience with social media platforms

		NE	PE	A	SG	VGE
1. Web-based social networks (SNSs) (e.g., Facebook, MySpace, and classmates)	Males	40.5	25.3	15.2	11.4	7.6
	Females	48.1	29.1	7.6	7.6	7.6
	Total	44.3	27.2	11.4	9.5	7.6
2. 1. 1. Blogs and microblogging (e.g., Twitter)	Males	2.5	10.1	25.3	25.3	36.7
	Females	1.3	7.6	19.0	13.9	58.2
	Total	1.9	8.9	22.2	19.6	47.5
3. 1. 1. Media sharing (e.g., YouTube)	Males	1.3	6.3	12.7	24.1	55.7
	Females	1.3	3.8	15.2	19.0	60.8
	Total	1.3	5.1	13.9	21.5	58.2
4. 1. 1. Instagram	Males	5.1	6.3	10.1	24.1	54.4
	Females	2.5	7.6	11.4	15.2	63.3
	Total	3.8	7.0	10.8	19.6	58.9
5. 1. 1. Text chat (e.g., WhatsApp)	Males	0	5.1	5.1	12.7	77.2
	Females	2.5	2.5	5.1	8.9	81
	Total	1.3	3.8	5.1	10.8	79.1
6. 1. 1. Wikis (e.g., Wikipedia)	Males	13.9	10.1	26.6	17.7	31.6
	Females	10.1	6.3	25.3	24.1	34.18
	Total	12.0	8.2	25.9	20.9	32.9
7. 1. 1. Video teleconferencing (e.g., Skype)	Males	31.6	22.6	21.5	7.6	16.5
	Females	34.2	26.6	10.1	16.5	12.7
	Total	12.0	3.2	25.9	20.9	32.9

NE no experience, PE poor experience, A average, SG somewhat good, VGE very good experience
Data presented as percentage (%)

(24.1%)—said "often." Fifty students (31.6%)—18 males (22.8%) and 32 females (40.5%)—said "sometimes." Eighteen students (11.4%)—11 males (13.9%) and 7 females (8.9%)—said "rarely." Thirteen students (8.2%)—8 males (10.1%) and 5 females (6.3%)—said "never."

In addition, 86.1% of the students reported that their instructors used YouTube (82.3% of males and 89.8% of females), WhatsApp (41.2%:53.2% of males and 29.1% of females), and Twitter (34.8%, 50.6% of males and 19.1% of females) in their classes (Table 7).

The results demonstrated in Table 8 reveal that using social media greatly influence student's overall behaviors and attitudes towards using social media for learning purposes. About 62% of the students (57% of males and 67% of females) agreed and strongly agreed that social media is important to support their learning, and about 68.9% (64.6% of males and 73.4% of females) reported that using social media to support learning is a good idea. About 47.4% (44.3% of males and of 50.6% females) of the students find that social media is desirable for

Table 3 Percentage of PT students using social media and social networks on a daily basis

Response	Males	Females	Total
1. Web-based social networks (SNSs) (e.g., Facebook, MySpace, and classmates)	11 (13.9%)	1 (1.3%)	12 (7.6%)
2. Blogs and microblogging (e.g., Twitter)	39 (49.4%)	59 (74.7%)	98 (62.0%)
3. Snapchat	66 (83.5%)	68 (86.1%)	134 (84.8%)
4. Media sharing (e.g., YouTube)	49 (62.0%)	68 (86.1%)	117 (74.1%)
5. Instagram	57 (72.2%)	60 (75.9%)	117 (74.1%)
6. Text chat (e.g., WhatsApp)	64 (81.0%)	69 (87.3%)	133 (84.2%)
7. Wikis (e.g., Wikipedia)	16 (20.3%)	13 (16.5%)	29 (18.4%)
8. Video teleconferencing (e.g., Skype)	5 (6.3%)	2 (2.5%)	7 (4.4%)
9. Other	1 (1.3%)	2 (2.5%)	3 (1.9%)

Data are represented as frequency and percentage
Others: Swarm, podcast, SoundCloud, and Telegram

Table 4 Amount of time spent on using social media and social networks

Response	Males	Females	Total
< 30 min	2 (2.5%)	0 (0%)	2 (1.3%)
30 min to < 1 h	3 (3.8%)	5 (6.3%)	8 (5.1%)
1 to < 2 h	8 (10.1%)	14 (17.7%)	22 (13.9%)
2 to < 3 h	21 (26.6%)	22 (27.8%)	43 (27.2%)
> 3 h	45 (57.0%)	38 (48.1%)	83 (52.5%)

Data are represented as frequency and percentage

learning, and 54.4% (48.1% of males and 60.7% of females) prefer using social media to join classmates in collaborative projects. Furthermore, 59.7% of the students (53.2% of males and 68.3% of females) reported that communication with their classmates and instructors using social media provides them with good learning experiences, and 58.8% (57% of males and 60.7% of females) prefer to attend classes where the instructors use social media in his/her teaching. About 41.8% of the students (50.7% of males and 32.9% of females) agreed and strongly agreed that they started using social media to support learning and feel difficult to stop using it.

The results also revealed that 79 (50%) of the students (46.9% males and 53.3% females) agreed and strongly agreed that they will achieve better learning results if social media is integrated into lectures. A total of 58 (36.7%) students (36.7% of both genders) reported that in the last year, their attitudes towards using social media for learning purposes became significantly more positive (Table 9).

Benefits of social media for learning process
Table 10 summarizes the benefits of using social media for learning purposes. The majority (55.6%) agreed and strongly agreed that the use of social media for learning purposes improves their academic performance. About 59.5% of the students stated that social media facilitates finding many educational resources, links, programs, and topics of discussion. About 53.2% of them acknowledged that social media was helpful to learn better than traditional teaching methods. Using social media for learning purpose develops writing, listening, critical thinking, and social skills among 53.6%, 73.4%, 62.7%, and 57.3%,

Table 5 Percentage of students using social media and social networks for learning purposes

Response	Males	Females	Total
Always	18 (22.8%)	24 (30.4%)	42 (26.6%)
Often	27 (34.2%)	30 (38.0%)	57 (36.1%)
Sometimes	31 (39.2%)	23 (29.1%)	54 (34.2%)
Rarely	2 (2.5%)	2 (2.5%)	4 (2.5%)
Never	1 (1.3%)	0 (0%)	1 (0.6%)

Data are represented as frequency and percentage

Table 6 Preference of social media and social networks for learning purposes

Response	Males	Females	Total
1. Web-based social networks (SNSs) (e.g., Facebook, MySpace, and classmates)	7 (8.9%)	1 (1.3%)	8 (5.1%)
2. Blogs and microblogging (e.g., Twitter)	24 (30.4%)	19 (24.1%)	43 (27.4%)
3. Snapchat	15 (19.0%)	9 (11.4%)	24 (15.2%)
4. Media Sharing (e.g., YouTube)	58 (73.4%)	73 (92.4%)	131 (82.9%)
5. Instagram	13 (16.5%)	12 (15.2%)	25 (18.9%)
6. Text chat (e.g., WhatsApp)	24 (30.4%)	24 (30.4%)	48 (30.4%)
7. Wikis (e.g., Wikipedia)	36 (45.6%)	34 (43.0%)	70 (44.3%)
8. Video teleconferencing (e.g., Skype)	1 (1.3%)	1 (1.3%)	2 (1.3%)
9. Other	2 (2.5%)	6 (7.6%)	8 (5.1%)

Data are represented as frequency and percentage
Others: Google, podcast, Duolingo app, PubMed, Mayo Clinic, Physiopedia, and Telegram

respectively. Meanwhile, using social media platforms helped 64.5% of the students to be more creative in their projects and assignments and facilitated collaborative learning among 49.3% of the students. About 63.2% agreed and strongly agreed that using social media enhanced the self-independent learning and majority of the students (70.9%) stated that social media facilitates learning anytime and anywhere.

Discussion
To our knowledge, no studies have been conducted in SA to investigate the patterns of using social media among PT students. Hence, this study aimed to ascertain physical therapy (PT) students' attitudes towards using social media for learning purposes, assess the differences in attitudes between genders, and assess the benefits of using social media in learning process. The aims were achieved using valid and reliable custom self-reported questionnaire. The reliability of the questionnaire was assessed using Cronbach's alpha which revealed excellent reliability of 0.83, and the value was higher than the 0.70 suggested by Tavakol and Dennick [20]. Researchers claimed that a range of Cronbach alpha between 0.70 and 0.79 is an acceptable level of internal consistency [21].

Interestingly, the response rate in this study was very high (100%). This can be attributed to the greater motivation of the students to participate in the study and using easy and simple questionnaire for the data collection.

All of the students were experienced in using social media and web-based SNSs and were members of more than one social network group prior to participation in the present study. The social media platforms with the best experience are WhatsApp (79.1%), Instagram (58.9%), YouTube (58.2%), and Twitter (47.5%). The results showed that

Table 7 Instructors' use of social media in classes

		Always	Often	Sometimes	Rarely	Never
1. 1. 1. Web-based social networks (SNSs) (e.g., Facebook, MySpace, and classmates)	Males	6.3	3.8	6.3	11.4	72.2
	Females	1.3	2.5	3.8	5.1	86.1
	Total	3.8	3.2	5.1	8.2	79.75
2. 1. 1. Blogs and microblogging (e.g., Twitter)	Males	7.6	17.7	25.3	21.5	27.8
	Females	1.3	5.1	12.7	8.9	72.2
	Total	4.4	11.4	19.0	15.2	50.0
3. 1. 1. Media sharing (e.g., YouTube)	Males	34.2	22.8	25.3	3.8	13.9
	Females	22.8	27.8	39.2	3.8	6.3
	Total	28.5	25.3	32.3	3.8	10.1
4. 1. 1. Text chat (e.g., WhatsApp)	Males	8.9	17.7	26.6	11.4	35.4
	Females	6.3	7.6	15.2	15.2	54.4
	Total	7.6	12.7	20.9	13.3	45.6
5. 1. 1. Wikis (e.g., Wikipedia)	Males	12.7	12.7	19.0	13.9	41.8
	Females	6.3	8.9	11.4	17.7	54.4
	Total	9.5	10.8	15.2	15.8	48.7
6. 1. 1. Video teleconferencing (e.g., Skype)	Males	5.1	6.3	6.3	5.1	77.2
	Females	5.1	5.1	2.5	86.1	87.3
	Total	2.5	5.7	5.7	3.8	82.3

Data are presented as percentage (%)

female students have the best experience with these social media platforms compared to males.

The findings revealed that PT students are heavy users of social media where 52.5% of them spend more than 3 h a day online. Male students are more likely to spend time online than female students (57.0%). While the majority of students (153, 96.9%) used social networking sites for learning purposes, female students were more likely to do so than males. Similarly, few studies reported that male students used the internet more often for entertainment while female students tended to access the internet for emails or school-related activities [22, 23]. The differences in social media use between the genders have not been reported in previous studies involving PT students or students of any healthcare-related programs except among pharmacy students in the United Kingdom [24]. They found that almost all pharmacy students (98.0%) used social networking sites mainly for personal reasons, rather than educational or professional reasons. However, most (76.5%) students acknowledged/agreed that they used social networking sites to discuss academic related problems.

The preferred social media platforms for learning purposes were YouTube (83.4%), WhatsApp (30.4%), Wikipedia (44.6%), and Twitter (27.4%). YouTube was the most popular social networking among females, while Twitter and Wikis were the preferred ones among males. WhatsApp (30.4%) was equally used by both genders. These sites could be wonderful tools for building a sustainable and life-long social network and building an extended community learning environment. This result is expected because most of the students already have social networking accounts and are used to obtain resources/materials for learning purposes on these sites.

This finding is in line with the previous studies by Bosch and McCarthy [5, 25]. They found that Twitter, WhatsApp, and YouTube are recognized as respectable learning platforms. In addition, Khatun and Al-Dhlan considered WhatsApp as one of the best possible effective tools for enhancing interaction among students and teachers [26]. On the other hand, a previous study showed that 87.5% of university students found Wikipedia as a source for their academic work and 24% of them considered it quite useful [27].

Interestingly, only 5.1% of PT students use Facebook for learning purposes. This is consistent with the findings of a similar study done by Wise et al. [28]. They stated that Facebook and other social networking sites have deficiency in aiding student engagement [28]. In contrast, a cross-sectional study conducted among health science students in Nepal showed that 80.8% of the students were spending time on Facebook as it is easy to acquire study material through it [29]. In addition, another study by Khan et al. also reported that 85% of PT students used Facebook for their active learning purposes, shared knowledge, and virtual videos [30]. In SA, the most commonly used social media platforms are YouTube, Snapchat, WhatsApp, and Twitter; this may result in less number of participants using Facebook for learning purposes in the current study [7, 31].

Table 8 Students' attitude towards using social media to support learning

		SD	D	N	A	SA
1. 1. 1. Social media are important because they help me in learning support.	Males	12.7	10.1	20.3	30.4	26.6
	Females	5.1	7.6	20.3	27.8	39.2
	Total	8.9	8.9	20.3	29.1	32.9
2. 1. 1. In my opinion, using social media to support learning is a good idea.	Males	7.6	11.4	16.5	34.2	
	Females	3.8	7.6	15.2	25.3	48.1
	Total	5.7	9.5	15.8	29.7	39.2
3. 1. 1. I find learning online through using social media is fun.	Males	10.1	6.3	25.3	27.8	30.4
	Females	5.1	7.6	16.5	31.6	39.2
	Total	7.6	7.0	20.9	29.7	34.8
4. 1. 1. I find using social media for learning is very desirable for me.	Males	10.1	10.1	35.4	17.7	26.6
	Females	11.4	11.4	26.6	25.3	25.3
	Total	10.8	10.8	31.0	21.5	25.9
5. 1. 1. I prefer to join classmates in collaborative projects using social media.	Males	10.1	10.1	31.6	30.4	17.7
	Females	6.3	11.4	21.5	29.1	31.6
	Total	8.2	10.8	26.6	29.7	24.7
6. 1. 1. Communicating with my classmates and instructors using social media provides me with good learning experiences.	Males	8.9	7.6	30.4	26.6	26.6
	Females	3.8	10.1	17.7	31.6	36.7
	Total	6.3	8.9	24.1	28.1	31.6
7. 1. 1. I prefer to attend a class where the instructors using the social media in his/her teaching.	Males	7.6	11.4	24.1	38.0	19.0
	Females	2.5	12.7	24.1	27.8	32.9
	Total	5.1	12.0	24.1	32.9	25.9
8. 1. 1. When I started using the social media to support learning, I found it difficult to stop it.	Males	11.4	7.6	30.4	30.4	20.3
	Females	6.3	17.7	43.0	15.2	17.7
	Total	8.9	12.7	36.7	22.8	19.0

SD strongly disagree, *D* disagree, *N* neutral, *A* agree, *SA* strongly agree
Data presented as percentage (%)

In agreement with Hung and Yuen [32] and Tur et al. [33], the current study found that using social media for learning purposes is convenient. A similar pattern of responses was found in relation to students' attitudes towards using social media. About 36.7% of both male and female students have positive attitudes towards using social media for learning purposes with a considerable amount of diversity among them in terms of their existing experience of social media in the academic process [32, 33]. Similarly, another study conducted by Al-Shdayfat showed that 32.6% of nursing students attending both

Table 9 PT students' attitudes towards using social media for learning purposes in the last years

Response	Males	Females	Total
Became significantly more positive	29 (36.7%)	29 (36.7%)	58 (36.7%)
Became slightly more positive	25 (31.6%)	30 (38.0%)	55 (34.8%)
Remained the same	19 (24.1%)	16 (20.3%)	35 (22.2%)
Became slightly more negative	3 (3.8%)	3 (3.8%)	6 (3.8%)
Became significantly more negative	3 (3.8%)	1 (1.3%)	4 (2.5%)

public and private universities in Jordan have positive attitudes towards using social media for academic purposes [2]. Furthermore, previous studies also revealed that females might have less positive attitudes, higher anxiety, and less competence towards using the internet and its applications compared to males [34, 35]. Another study done to assess cross cultural perspective in terms of attitudes towards the use of internet and usage characteristics in females showed that significant cultural and racial differences exists [36].

To enhance the students' learning, the instructors find ways to merge technologies such as social media networks into classrooms. The results illustrated that 80.3% of PT students preferred to attend a class where the instructor uses social media in his/her teaching. Female students showed more interest and believed that social media is quite useful to support their academic learning, communicate with their classmates and instructors, successfully complete collaborative projects, and discuss academic related problems. This pattern indicates a change within the student body in terms of how they seek help and may

Table 10 Benefits of social media for learning process

		SD	D	N	A	SA
1. 1. 1. I find many educational resources, links, and programs and topics of discussion when I use social media.	Males	12.7	7.6	29.1	25.3	25.3
	Females	3.8	6.3	21.5	31.6	36.7
	Total	8.2	7.0	25.3	28.5	31.0
2. 1. 1. Social media encourage me to learn better than traditional teaching methods.	Males	8.9	20.3	31.6	25.3	13.9
	Females	1.3	16.5	15.2	36.7	30.4
	Total	5.1	18.4	23.4	31.0	22.2
3. 1. 1. My writing skills develop when I communicate with others through social media.	Males	3.8	17.7	31.6	30.4	16.5
	Females	2.5	13.9	30.4	21.5	31.6
	Total	3.2	15.8	31.0	25.9	24.1
4. 1. 1. Watching videos through social media develops my listening skills.	Males	5.1	11.4	15.2	38.0	30.4
	Females	2.5	2.5	16.5	30.4	48.1
	Total	3.8	7.0	15.8	34.2	39.2
5. 1. 1. Discussing and exchanging views with others using social media develops my critical thinking skills.	Males	2.5	11.4	29.1	32.9	24.1
	Females	1.3	8.9	21.5	46.8	21.5
	Total	1.9	10.1	25.3	39.9	22.8
6. 1. 1. Communicating and interacting with my classmates and instructors through the social media helps me develop my social skills.	Males	6.3	10.1	30.4	26.6	26.6
	Females	1.3	10.1	27.8	35.4	25.3
	Total	3.8	10.1	29.1	31.3	26.0
7. 1. 1. Applications and programs provided by social media help me to be more creative in my projects and assignments.	Males	5.1	12.7	21.5	32.9	27.8
	Females	1.3	6.3	24.1	29.1	39.2
	Total	3.2	9.5	22.8	31.0	33.5
8. 1. 1. Social media help me to learn collaboratively with others who have the same interests.	Males	5.1	11.4	36.7	25.3	21.5
	Females	3.8	10.1	34.2	26.6	25.3
	Total	4.4	10.8	35.4	25.9	23.4
9. 1. 1. Learning online through social media enhances the self-independent learning I have.	Males	6.3	11.4	29.1	26.6	26.6
	Females	0	6.3	19.0	36.7	38.0
	Total	3.2	8.9	24.1	31.6	31.6
10. 1. 1. I can learn anytime and anywhere using social media.	Males	5.1	11.4	19.0	26.6	38.0
	Females	5.1	3.8	13.9	24.1	53.2
	Total	5.1	7.6	16.5	25.3	45.6
11. 1. 1. I express my opinions and thoughts more freely through social media than in face-to-face discussions with my instructors and classmates in the classroom.	Males	6.3	15.2	29.1	26.6	22.8
	Females	7.6	13.9	35.4	16.5	26.6
	Total	7.0	14.6	32.3	21.5	24.7
12. 1. 1. In general, the use of social media for learning purposes develops my academic performance.	Males	3.8	8.9	34.2	30.4	22.8
	Females	1.3	10.1	27.8	35.4	25.3
	Total	3.2	8.9	32.3	27.8	27.8

SD strongly disagree, *D* disagree, *N* neutral, *A* agree, *SA* strongly agree

indicate that PT students see social media platforms as an academic aid, rather than purely a social tool.

Furthermore, 79 (50%) students believed that they might achieve better learning results if social media is integrated into lectures. This finding is similar to the results of previous studies [31, 37]. Authors found that students who are using social media frequently have positive attitudes to integrate social media in education and achieve better learning results. Nonetheless, other studies' findings were inconsistent with the current study results suggesting a negative correlation between students' attitudes towards using social media and academic performance [38–41].

Similar to the existing literature [26, 31], the results of the current study showed that social media is useful for

learning purposes and provides important educational resources, links, programs, and topics of discussion. Also, it encourages them to learn better than traditional teaching methods and develops writing, listening, critical thinking, and social skills. In addition, using social media platforms helped most students to be creative in their projects and assignments, facilitated collaborative learning, enhanced the self-learning, and facilitated learning anytime and anywhere.

While this is the first ever study to design and validate a self-reported questionnaire to investigate the PT students attitudes towards using social media platforms in Arab countries, there are few limitations as well. The study was conducted in just one PT institution in SA, and this is an invitation to future studies to include other educational institution to give the advantage of generalizability of the findings. In addition, further studies are recommended to compare between male and female students of other health care programs and to investigate the factors affecting their attitudes towards using social media for academic purposes. Furthermore, future studies are needed to specifically investigate the effect of using social media on students' academic achievement across genders and levels in the program (GPA).

Conclusion
The social media use for learning purposes is convenient among PT students. They have positive attitudes towards its use for academic purposes with similar pattern between males and females. YouTube was one of the most preferred social media platforms for academic learning. Social media platforms not only help to improve self-independent learning and academic performance but also help to enhance the quality of the students' learning experience.

Supplementary information
Supplementary information accompanies this paper at https://doi.org/10.1186/s43161-020-00014-8.

Additional file 1.

Abbreviations
CAMS: College of Applied Medical Sciences; GPA: Grade point average; ICT: Information and communication technology; PT: Physical therapy; SA: Saudi Arabia

Authors' contributions
AS suggested the research idea, helped in data collection, and analyzed and interpreted the data. She is the major contributor in the writing process. FA, LA, RA, SA, and SA participated in data collection and analysis and interpretation of data. SB and GM revised the data analysis and they were contributors in the writing process. All authors read and approved the final version of the manuscript.

Availability of data and materials
The data sets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Ethics approval and consent to participate
The study was approved by the College of Medicine Institutional Review Board, King Saud University, with reference number CAMS E-19-3767. Students that participated in the study completed the survey after providing written informed consent.

Consent for publication
N/A

Competing interests
The authors declare that they have no competing interests.

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