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# The impact of social media on academic performance and interpersonal relations among health sciences undergraduates

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## Abstract:

**BACKGROUND:** Social media has become a most inseparable part of young adults' lives with the rapid development of information and communication technology. The study aimed to assess the use of social media and its association with academic performance, well-being, and interpersonal relation of the health sciences undergraduates.

**MATERIALS AND METHODS:** A descriptive cross-sectional study was conducted among undergraduates in Faculty of Allied Health Sciences ( $n = 220$ ), University of Sri Jayewardenepura, Sri Lanka. Data were collected using a pretested, self-administered questionnaire and analyzed using descriptive and inferential statistics.

**RESULTS:** The response rate was 79.5%. All undergraduates ( $n = 175$ ) had social media accounts, and WhatsApp was the most frequently used social media site (96.0%), followed by Facebook (70.9%), mainly for communicating (85.1%), entertainment (83.4%), and online learning (65.7%). Most undergraduates (72.0%) spent 2–5 h daily on social media sites and followed social media 1–10 times per day (54.9%). The majority of them wished to use social media for academic purposes (94.9%), and the most preferred site for academic work was WhatsApp (65.1%). Most undergraduates' self-reported Grade Point Average (GPA) (46.3%) was  $<2.9$ . There was a statistically significant association between the mean GPA and frequencies of using social media ( $P = 0.02$ ) (not daily [ $3.3 \pm 0.3$ ], 1–10 times a day [ $2.9 \pm 0.4$ ], and more than 10 times a day [ $3 \pm 0.4$ ]). Perceived social media addiction and duration of sleep ( $P = 0.02$ ), activities of daily living ( $P = 0.004$ ), and study time ( $P = 0.02$ ) were found to be significantly associated.

**CONCLUSIONS:** Despite the undergraduates' willingness to use social media for academic purposes, the frequency of using social media had a significant influence on their academic performance. This highlights the importance of guidance on effective use of social media and social media addiction to improve undergraduates' academic performance, well-being, and interpersonal relationships.

## Keywords:

Academic performance, internet addiction disorder, interpersonal relations, social media, Sri Lanka, young adults

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## Introduction

Social media has become a major technological development that affects social interactions.<sup>[1]</sup> Six degrees were the first recognizable social media site that developed in 1997.<sup>[2]</sup> The definition of social media

includes “a social network of interactive communication that exists between people using specialized electronic platforms for interaction such as Facebook, WhatsApp, Twitter, Myspace, LinkedIn, and Instagram.”<sup>[3]</sup>

Today, social media has become a most inseparable part of users' lives,<sup>[4]</sup> especially

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young adults and students.<sup>[1]</sup> All other leisure activities have been replaced by the use of social media.<sup>[5]</sup> There are more than 4.5 billion people worldwide who use the Internet, while more than 3.8 billion of them use social media.<sup>[6]</sup> Due to the high-speed Internet connection around the world, people can unlimitedly access their favorite social networking sites from anywhere in the world.<sup>[7]</sup>

People use social media for different purposes such as staying in touch with family and friends,<sup>[7]</sup> academic purposes,<sup>[7]</sup> as a hobby,<sup>[7]</sup> meeting new people,<sup>[7]</sup> and for business purposes.<sup>[4,7]</sup> Further, social media is used by health-care professionals to share health-related information, promote healthy behaviors, and interact with patients.<sup>[8]</sup>

Undergraduates use social media than other people,<sup>[9]</sup> and the preferred sites are WhatsApp and Facebook, especially among medical and paramedical undergraduates.<sup>[10]</sup> Undergraduates spent 1–3 h/day on social media, and it has become their daily habit<sup>[10]</sup> with the purposes such as entertainment, update with the latest news, and socializing.<sup>[11]</sup> Further, social media has been used for academic purposes such as group project completion, individual study, group project discussion, individual assignment completion, contact the instructor, and note sharing by the undergraduates.<sup>[12]</sup> They perceived that connecting with their peers and instructors via social media leads to their academic success and it was the best method for completing group projects without face-to-face meetings.<sup>[12]</sup>

Some of the identified positive effects of social media on education include socializing, sharing knowledge, updating, learning from various sources, preparing, and sharing.<sup>[8]</sup> Negative effects of social media on education include reduced learning and research capabilities, reduction in real human contact, time wastage, low grades, and loss of motivation.<sup>[8]</sup> Social media addiction impacts the students' academic performance as well as their physical well-being and psychological well-being.<sup>[8,13]</sup> Some students are becoming preoccupied with social media networks and unable to control their use of this new technology, thereby jeopardizing their employment and personal relationships.<sup>[1]</sup>

With little evidence on the use of social media and its impact in Sri Lanka, this study aimed to assess the use of social media, perception of using social media for academic purposes, and association between the use of social media and academic performance and interpersonal relationships of the undergraduates in Faculty of Allied Health Sciences (FAHS), University of Sri Jayewardenepura (USJ).

## Materials and Methods

### Study design and setting

A descriptive cross-sectional study was conducted at the FAHS, USJ, Sri Lanka. There are three-degree programs in the FAHS, USJ, namely Nursing Degree, Pharmacy Degree, and Medical Laboratory Sciences Degree. All degree programs are four-year academic programs that are conducted in English medium.

### Study participants and sampling

The questionnaire was administered to all undergraduates in the 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> academic years at FAHS, USJ. The total number of students in the study population was 220. First-year undergraduates were excluded from the study due to limited exposure to academic activities at the time of the data collection of the study.

### Data collection tool and technique

A pretested self-administered questionnaire was developed by literature search incorporating the personal experience of the researchers. It was administered in English. The questionnaire was prepared as a Google Forms, and it comprised four sections: section 1 – information on sociodemographic data, section 2 – information regarding the use of social media, section 3 – perception of the use of social media, and section 4 – effects of social media on well-being and interpersonal relationships.

Data were collected during October–November 2020 by sharing the Google link to all undergraduates ( $n = 220$ ) with the information sheet via E-mail and WhatsApp messages. Due to the COVID-19 pandemic, it was a time where the university was closed and face-to-face data collection was not feasible. The deadline to complete the questionnaire was given and reminders to the students were sent 2 days before the deadline. Those who were not responding after two reminders were considered nonresponders. The Statistical Package for the Social Sciences (SPSS) software for Windows version 20 IBM, Chicago, IL, USA was used for the data analysis. Descriptive statistics and relevant inferential tests such as the Chi-square test and independent-sample *t*-test and one-way ANOVA were used to analyze the data.  $P < 0.05$  was considered statistically significant.

### Ethical consideration

Informed verbal consent was obtained before commencement of the data collection and ethical standards were followed according to the Helsinki Declaration of 1975, as revised in 2000. Ethical approval was obtained from the Ethics Review Committee of the university before the commencement of the study (Ref No: Nur/20/20).

## Results

The response rate was 79.5% ( $n = 175$ ), and a majority of them were female (83.4%) undergraduates and were single (93.7%). The mean age of the undergraduates was 24.97 (standard deviation  $\pm$  2.68) years. There was an equal distribution of study participants from three-degree programs: Nursing, Pharmacy, and Medical Laboratory Sciences as 36%, 30.3%, and 33.7%, respectively. Thirty-eight per cent of participants ( $n = 38.3$ ) were in the 2<sup>nd</sup> year of their respective degree programs. The participation of undergraduates in the study from the 3<sup>rd</sup> year and 4<sup>th</sup> year was 31.4% ( $n = 55$ ) and 30.3% ( $n = 30.3$ ), respectively.

All the undergraduates (100%) had social media accounts, and the majority (99.4%) of them used a smartphone and laptop (32%) to access social media. The main data sources for accessing social media were mobile data (92.6%) and Wi-Fi (45.1%). WhatsApp was the most frequently used social media (96.0%), followed by Facebook (70.9%).

Nearly 55% of the undergraduates had one social media account when 37.7% had 2–3 social media accounts. Nearly seven per cent of undergraduates had more than four social media accounts. When considering the frequency of using social media, most of the participants (72.0%) spend 2–5 h daily on their favorite social media sites. Twenty-two undergraduates (12.6%) spend more than 5 h on social media. Most of the undergraduates (54.9%) follow social media 1–10 times per day while 42% follow more than 10 times a day. The majority of the undergraduates (93.1%) used social media during their free time. Thirty-eight participants reported that they use social media while at university and nearly one-fourth (27%) use social media at any spare moment [Table 1].

The majority of the undergraduates reported that they check social media before getting out of bed (78.9%) and mentioned that the last thing they do before going to sleep is checking social media (58.9%). The majority of the undergraduates (85.1%) were using social media for communicating with friends and entertainment (83.4%). Nearly almost all undergraduates (94.9%) were willing to use social media for academic purposes. The most preferable ways of communicating with lecturers were WhatsApp ( $n = 114$ , 65.1%) followed by E-mail ( $n = 98$ , 56.0%), Google Classroom ( $n = 95$ , 54.3%), and LMS ( $n = 82$ , 46.9%).

Nearly one-fifth (21%) of the undergraduates strongly agreed that “social networking tools facilitate knowledge sharing.” The majority of the undergraduates were agreed with the statements of “through social networking

**Table 1: Use of social media by undergraduates ( $n=175$ )**

Characteristics	<i>n</i> (%)
The device used to access social media*	
Smartphone	174 (99.4)
Laptop	56 (32.0)
Tablet	10 (5.7)
Desktop	5 (2.9)
Types of social media*	
WhatsApp	168 (96.0)
Facebook	124 (70.9)
Instagram	43 (24.6)
Twitter	8 (4.6)
Other	20 (11.4)
YouTube	12 (6.9)
Viber	5 (2.9)
Number of social media accounts	
One	96 (54.9)
2-3	66 (37.7)
>4	13 (7.4)
Time spent on social media daily	
1 h or less	27 (15.4)
2-5 h	126 (72.0)
>5 h	22 (12.6)
Frequency of following social media daily	
Not daily	6 (3.4)
1-10 times a day	96 (54.9)
>10 times a day	73 (41.7)
Accessing social media*	
During free time	163 (93.1)
Any spare moment	47 (26.9)
While at university	38 (21.7)
During social occasions	29 (16.6)
Meal times	23 (13.1)
During lectures	3 (1.7)
Duration of using social media (years)	
<1	1 (0.6)
1-3	59 (33.7)
>3	115 (65.7)
Using social media just after waking up	
Yes	138 (78.9)
No	37 (21.1)
Using social media just before sleep	
Yes	103 (58.9)
No	72 (41.1)
Purposes of using social media*	
Communicating with friends	149 (85.1)
Entertainment	146 (83.4)
Online learning	115 (65.7)
News	114 (65.1)
Reading information	90 (51.4)
Passing away time	81 (46.3)
Willingness to use social media for academic purposes	
Yes	166 (94.9)
No	9 (5.1)

\*Multiple answers were allowed

learning environment, I can get what information I want” (46.3%), “social networking sites help to get help

from friends and classmates on assignments" (45.7%), "social networking tools facilitate knowledge sharing" (42.9%), and "through social networking applications, I can freely create and participate in group discussions" (37.7%) [Table 2].

There was a statistically significant association between perceived social media addiction and time spent on social media daily ( $P = 0.002$ ), using social media just after waking up ( $P = 0.005$ ), and checking social media just before going to sleep ( $P = 0.001$ ) [Table 3].

Nearly 46% of the undergraduates' self-reported GPA was  $<2.9$ . There was a significant mean difference between the GPA and frequencies of following social media (not daily [ $3.3 \pm 0.3$ ],

1–10 times a day [ $2.9 \pm 0.4$ ], and more than 10 times a day [ $3 \pm 0.4$ ], ( $P = 0.02$ ) [Table 4].

There was a statistically significant association between perceived social media addiction and duration of sleep ( $P = 0.02$ ), effects on activities of daily living ( $P = 0.004$ ), and effects on study time ( $P = 0.02$ ). However, there was no statistically significant association between the presence of sleep problems and perceived effects on health among the undergraduates ( $P > 0.05$ ) [Table 5].

Nearly half of the undergraduates (52.6%) accepted that social media has a neutral effect on their relationships, followed by a positive effect (30.9%) and a strongly positive (10.3%) effect. A high percentage of

**Table 2: Perception of learning from social media**

Statements	Strongly agree, n (%)	Agree, n (%)	No idea, n (%)	Disagree, n (%)	Strongly disagree, n (%)
Social networking tools increase students' creativity and interactivity	15 (8.6)	44 (25.1)	88 (50.3)	20 (11.4)	8 (4.6)
I can freely create and participate in group discussions through social media	19 (10.9)	66 (37.7)	63 (36.0)	20 (11.4)	7 (4.0)
Students will be able to personalize their learning by using the social networking application of e-learning	16 (9.1)	66 (37.7)	71 (40.6)	15 (8.6)	7 (4.0)
Social networking tools facilitate knowledge sharing	36 (20.6)	75 (42.9)	49 (28.0)	8 (4.6)	7 (4.0)
I can get the information that I want through social media	36 (20.6)	81 (46.3)	50 (28.6)	12 (6.9)	5 (2.9)
Social media enable me to be a knowledge producer rather than a consumer	5 (2.9)	34 (19.4)	100 (57.1)	29 (16.6)	7 (4.0)
Using social networking sites improves my study habits	6 (3.4)	53 (30.8)	67 (38.3)	39 (22.3)	10 (5.7)
Using social networking sites improves my interaction with classmates and lecturers	13 (7.4)	58 (33.1)	61 (34.9)	7 (15.4)	16 (9.1)
Social networking sites enables to contact friends/classmates for doing assignments	29 (16.6)	80 (45.7)	42 (24.0)	14 (8.0)	10 (5.7)

**Table 3: Association between perceived social media addiction and social media use**

Social media use	Perceived social media addiction		P
	Yes, n (%)	No, n (%)	
Frequency of posting something on social media			
Never	3 (1.7)	17 (9.7)	0.48 <sup>b</sup>
Every month	11 (6.3)	47 (26.9)	
Every week	19 (10.9)	46 (26.3)	
Daily	4 (2.3)	21 (12.0)	
Multiple times a day	2 (1.1)	5 (2.9)	
Frequency of following social media			
Not daily	1 (0.6)	5 (2.9)	0.22 <sup>b</sup>
1-10 times a day	17 (9.7)	79 (45.1)	
>10 times a day	21 (12.0)	52 (29.7)	
Time spends on social media daily			
1 h or less	0 (0.0)	27 (15.4)	0.002 <sup>b</sup>
2-5 h	30 (17.1)	96 (54.9)	
>5 h	9 (5.1)	13 (7.4)	
Using social media just after waking up			
Yes	37 (21.1)	101 (57.7)	0.005 <sup>a</sup>
No	2 (1.1)	35 (20.0)	
Checking social media just before going to sleep			
Yes	32 (18.3)	71 (40.6)	0.001 <sup>a</sup>
No	7 (4.0)	65 (37.1)	

<sup>a</sup>Pearson Chi-square, <sup>b</sup>Likelihood ratio

**Table 4: Association between the use of social media and undergraduates' academic performance**

Use of social media	GPA				P
	<2.9, n (%)	3-3.2, n (%)	3.3-3.6, n (%)	>3.7, n (%)	
Number of social media accounts					
One	41 (27.7)	19 (12.8)	19 (12.8)	1 (0.7)	0.57 <sup>b</sup>
2-3	35 (23.6)	11 (7.4)	9 (6.1)	0	
>Four	5 (3.4)	4 (2.7)	4 (2.7)	0	
Time spend on social media daily					
1 h or less	14 (9.5)	4 (2.7)	4 (2.7)	1 (0.7)	0.57 <sup>b</sup>
2-5 h	57 (38.5)	26 (17.6)	23 (15.5)	0	
>5 h	10 (6.8)	4 (2.7)	53.4	0	
Frequency of following social media daily					
Not daily	1 (0.7)	2 (1.2)	3 (2.0)	0	0.02 <sup>b</sup>
1-10 times a day	52 (35.1)	11 (7.4)	13 (8.8)	1 (0.7)	
>10 times a day	28 (18.9)	21 (14.2)	16 (10.8)	0	
Duration of using social media (years)					
<1	0	0	1 (0.7)	0	0.39 <sup>b</sup>
1-3	29 (19.6)	9 (6.1)	10 (6.8)	1 (0.7)	
>3	52 (35.1)	25 (16.9)	21 (14.2)	0	
Perceived social media addiction					
Yes	16 (10.8)	9 (6.1)	8 (5.4)	0	0.74 <sup>b</sup>
No	65 (43.9)	25 (16.9)	24 (16.2)	1 (0.7)	

<sup>b</sup>Likelihood ratio. GPA=Grade point average

**Table 5: Association between perceived social media addiction and well-being of the undergraduates**

Characteristics of well-being	Perceived social media addiction		P
	Yes, n (%)	No, n (%)	
Duration of sleep			
<6 h	3 (1.7)	18 (10.3)	0.02 <sup>b</sup>
6-9 h	32 (18.3)	117 (66.9)	
Over 9 h	4 (2.3)	1 (0.6)	
Presence of sleep problems			
Never	26 (14.9)	87 (49.7)	0.76 <sup>a</sup>
Sometimes	13 (7.4)	49 (28.0)	
Effects on health			
Yes	9 (5.1)	21 (12.0)	0.27 <sup>a</sup>
No	30 (17.1)	115 (65.7)	
Effects on activities of daily living			
Yes	27 (15.4)	59 (33.7)	0.004 <sup>a</sup>
No	12 (6.9)	77 (44.0)	
Effects on study time			
Yes	27 (15.4)	64 (36.6)	0.02 <sup>a</sup>
No	12 (6.9)	72 (41.1)	

<sup>a</sup>Pearson Chi-square, <sup>b</sup>Likelihood ratio

students (71.4%) reported that they do not enjoy online interactions more than face-to-face interactions.

## Discussion

The study investigated the use of social media and its effects on academic performance and interpersonal relations among health science undergraduates. The present study revealed that all undergraduates in FAHS, USJ, used social media, commonly WhatsApp and Facebook. It was similar to other studies where

WhatsApp was the most used social media among undergraduates.<sup>[10,11,14]</sup> In contrast, Facebook and YouTube were the most commonly used social networking sites among medical, dental, and pharmacy students at the University of Sharjah, UAE,<sup>[15]</sup> and Facebook was the most commonly used social media site in Kenya.<sup>[16]</sup> This might be due to the different time periods in which different studies were conducted and the new social media sites emerged and their effectiveness.

Similar to the present study, undergraduates were accessing social networks through mobile phones and laptops at a large state university in Kuwait.<sup>[14]</sup> The present study showed that most of the undergraduates had only one social media account which is in contrast to other studies where the undergraduates had 3–4 social media sites.<sup>[10,13]</sup> Purposes of using social media are found to be communicating with friends, entertainment, online learning, and staying up to date with news. This is in line with others' findings that students use social media to passing away time,<sup>[11]</sup> entertainment,<sup>[11,17]</sup> communicating with others,<sup>[16,17]</sup> and learning.<sup>[12,16-18]</sup>

The current study showed that more than half of the undergraduates' used social media daily for between 2 and 5 h with a frequency of 1–10 times a day similar to other studies,<sup>[16,17]</sup> contrast to study conduct in Bahrain where most participants had more than 20 logins per day.<sup>[18]</sup> According to the present study, most of the study undergraduates were persuaded to access their favorite social media sites during free time, any spare moment, while at university, and during social occasions accordingly. It has been evident that students used social

media during their free time and used it while at school or during their spare moment.<sup>[19]</sup> With the advancement of technology, day-by-day new social media sites are evolving and creating user-friendly and attractive apps. This will lead to an increase in the duration of using social media among users.

Undergraduates' perception of using social media for academic purposes was assessed, and most of the undergraduates had a willingness to use social media for academic purposes. WhatsApp was the most preferable method of communicating with lecturers, followed by E-mail, Google Classroom, and LMS, respectively. This result agreed with past studies where undergraduates preferred social media over e-learning platforms.<sup>[18]</sup> It may be due to easy accessibility for social media than e-learning platforms such as LMS. The present study showed that majority of the undergraduates perceived that they were not addicted to social media contrast to a study that showed that most of the students had a moderate level of social media addiction.<sup>[20]</sup> Users can log in to social media sites for different purposes. Excessive use of these sites can cause addiction.<sup>[20]</sup> Perceived social media addiction was significantly associated with the time spend on social media daily, using social media just after waking up and checking social media just before going to sleep in the present study. A similar result was found by Al-Menayes (2015).<sup>[21]</sup>

The academic performance was assessed through the undergraduates' GPA, and a majority had less than 2.9 GPA in the present study. There was no difference in the mean GPA of the undergraduates who perceived that they were addicted to social media and gender in the present study. However, researchers have found a significant negative correlation between the number of social media accounts and GPA among undergraduates in the USA.<sup>[22]</sup>

Some researchers stressed that social media platforms promote students learning and have found a significant positive impact on academic performance.<sup>[23]</sup> However, in the present study, frequencies of following social media were found to be associated with lower GPA similar to a study conducted in Sri Lanka where most of the heavy or frequent social media users had lower grades compared to the light users.<sup>[24]</sup> It has been evident that time spent using social media/social media addiction has a strong negative predictor of academic performance.<sup>[9,11,14,20-22]</sup> This might be due to the distractive nature of social media websites.<sup>[20,22]</sup> It is imperative to use social media to aid undergraduates' academic success and to make connections with peers and faculty.<sup>[11]</sup>

In Sri Lanka, entering a university is very competitive and those who are selected also need to work hard to

get a good GPA.<sup>[25]</sup> COVID-19 pandemic has changed the usual learning environment of the undergraduates resulting in challenges to the students.<sup>[26]</sup> This will further motivate undergraduates to use social media frequently, and the time spent using social media comes at the expense of activities that could enhance a student's academic performance.<sup>[14]</sup> Undergraduates can become addicted to social media and lead to diminishing academic performances and instigating social and health-related challenges.<sup>[13]</sup> Perceived social media addiction had an association with duration of sleep, activities of daily living, and study time in the present study. Similarly, other studies have found an association between the use of social media with sleep quality among undergraduates.<sup>[27,28]</sup> Reducing the quality of sleep negatively affects the students' concentration and academic quality.<sup>[20]</sup> Lack of adequate sleep interferes with the secretion of serotonin and melatonin that increases the stress and anxiety level among students.<sup>[13,20]</sup> This will reduce the brainpower and cognitive abilities which can negatively impact on academic performance of the student.<sup>[29]</sup>

According to the results of the present study, the majority of the participants reported that they do not enjoy online interactions over the face-to-face interactions. Undergraduates commented that a face-to-face interaction creates less confusion about what each person had to do.<sup>[12]</sup> Further, they perceived that social media has a neutral effect on their relationships similar to a study conducted in Kolkata, India.<sup>[10]</sup> This is in contrast to a study conducted in South Africa where the majority of the students believed that social media somewhat affects personal relationships.<sup>[30]</sup>

Social media is not self-destructive and harmful on its own, but how it is used by the user leads to positive and negative consequences.<sup>[20]</sup> It has been evident that social media can engage students in active learning using user-generated content, facilitation of communication and feedback, collaboration, and access to resources.<sup>[10]</sup> The responsible use of social media by health sciences undergraduates will contribute to their academic performance and professional development. Ultimately, this would be beneficial to patients.<sup>[10]</sup>

### Limitation and recommendation

The current study was limited to undergraduates of the Faculty of Allied Health Sciences, USJ. The study sample was limited as data collection was conducted during the COVID-19 pandemic situation where all the universities were closed for more than 5 months in Sri Lanka. The self-report academic performance and the social media addiction might have led to recall bias.

The study recommends that students need to limit the time spent on social media sites which would allow

them to attend their academic activities. It will be beneficial to incorporate cognitive behavioral therapy into counseling programs for undergraduates to avoid social media addiction and to promote mental health during their academic years. Additionally, the findings have implications for educators/academics to consider how social media can integrate into the academic curriculum of Allied Health Sciences undergraduates channeling its positive influence into the curriculum to maximize learning. Organizing awareness programs for undergraduates regarding the use of social media in the right direction will be a learning aid.

## Conclusions

Social media is very popular among health sciences undergraduates, and they use social media to communicate with friends, entertainment, online learning, and updating news. It was found that social media has a negative impact on a student's academic performance and daily living. Parents and academics should monitor the social media use by undergraduates to prevent social media addiction associated with excessive use. Future research can be focused to determine the efficacy of using social media in the teaching-learning activities for health sciences undergraduates.

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## Conflicts of interest

There are no conflicts of interest.

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