



Student and faculty perceptions of plagiarism in health sciences education

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ABSTRACT

Academic misconduct is a problem encountered by many academic programmes, including programmes in the health sciences. The primary purpose of the present study was to assess doctoral student and graduate faculty perceptions of academic misconduct, specifically plagiarism. We used a cross-sectional survey design, and separate surveys were developed for students and faculty. The student survey measured student perceptions of the prevalence of plagiarism among students in general and assessed the occurrence of each student's plagiaristic behaviours. The faculty survey measured faculty perceptions of the prevalence of plagiarism among students in general and among students in their courses specifically. Two hundred and thirty-eight students and 92 faculty completed the surveys. Students were doctoral health sciences students enrolled in a campus-based, online or hybrid programme. Compared with the self-reported behaviour of students, faculty believed more students were involved with plagiarism. Self-rated knowledge about plagiarism was significantly higher among online students and faculty than among campus-based students and faculty ($p < 0.001$). Both students and faculty believed the most common plagiaristic activity was citing and referencing a full-text source when only the abstract was read, but only a few students reported personally doing this. Additionally, more campus-based students than online students reported working closely with another classmate on an assignment when they were not authorised to do so ($p < 0.001$). In the present study, surveyed students and faculty believed plagiarism was prevalent among the general student population; however, few students self-reported this behaviour.

ARTICLE HISTORY

Received 8 July 2016
Accepted 1 July 2017

KEYWORDS

Academic misconduct; plagiarism; higher education; health sciences; perception; questionnaire

Introduction

Academic misconduct is a concern in graduate education. In health sciences graduate programmes, academic misconduct is particularly problematic because many students are practicing clinicians bound by strict professional codes of ethical conduct. Therefore, a student's ethical lapse in a classroom may suggest a weak ethical foundation that could negatively affect patient care or decision-making.

Several researchers have investigated academic misconduct in various disciplines of the health sciences. Segal et al. (2010) found that one in 20 residency applications were plagiarised. Papadakis and Wofsy (2010) found ghost-written personal statements for medical students applying for residencies had become a 'cottage industry' and suggested admission committees examine alternative means of

evaluating candidates. A study of Croatian medical students (Bilić-Zulle et al. 2005) found only 9% of the students did not plagiarise any content when asked to write a brief essay. In a study of pharmacy students, Ryan et al. (2009) reported students did not believe weaving snippets of copied text to form sentences and paragraphs was dishonest or unethical.

A large multi-site study by McCabe (2009) assessed data from 12 nursing schools and compared findings with data from a larger longitudinal study for comparison between nursing students and non-nursing students. When asked to self-report academic misconduct behaviour, the behaviour of undergraduate and graduate nursing students from the McCabe study was similar to students in the longitudinal study. The majority of dishonest behaviours by nursing students were for less egregious forms of dishonesty, such as collaboration or cutting and pasting a few sentences from a source; however, 8% of graduate nursing students admitted to helping another student cheat on a test, while only 4% of graduate students in the longitudinal study did. Overall, 58% of undergraduate nursing students admitted to at least one academic offence compared with 72% of undergraduate non-nursing students; 47% of graduate nursing students admitted to at least one academic offence compared with 48% of graduate non-nursing students. McCabe (2009) reported nursing faculty perceived equal or greater numbers of some behaviours compared with non-nursing faculty, even though nursing faculty took more proactive steps to discourage academic misconduct, such as syllabus statements or different test versions.

In a study of Scottish medical students, Rennie and Rudland (2003) examined attitudes toward academic misconduct and self-reported dishonest behaviour over five years. While certain behaviours (e.g. copying someone else's answers during an exam) were consistently perceived as wrong during the study, other behaviours (specifically, forging a doctor's signature or falsely reporting having done a patient examination) were perceived as not wrong or students reported being *not sure* if the behaviours were wrong. For a scenario of forging a doctor's signature, 99% of first-year medical students perceived the action as wrong. By the fourth year of medical school, 89% perceived this action as wrong. While 97% of first-year medical students knew falsifying patient data was wrong, only 74% of fifth-year students believed it to be wrong, 16% did not believe it to be wrong, and 10% were not sure.

Similar findings have been reported in allied health professions. For example, Montuno et al. (2012) reported that academic dishonesty was common among physical therapy students, and was considered by students to be less serious if they were helping peers. While Dereczyk et al. (2010) reported that physician assistant students had a high self-reported level of academic integrity, students perceived collaborating with peers to be less serious than other offences, such as cheating on an exam.

Given these findings, professional health-care education with its demands of excellence, competitive residencies and practicums, and time pressure, may foster a lack of integrity in students. A study evaluating academic dishonesty in nursing students in Turkey has similarly suggested that the intensive curriculum, complexity of topics, and the diversity of clinical practicums that are part of health science education may predispose health-care students to more incidents of academic dishonesty (Tuna Oran et al. 2016).

Alarming is the increasing literature supporting that students in the health sciences: nursing, medical and pharmacy do not consider academic dishonesty as unethical or immoral behaviour and are considering it normal behaviour (Dereczyk et al. 2010; Henning et al. 2013; Tuna Oran et al. 2016). This is a growing concern that requires further research as it is uncertain how this perception of cheating as being the 'norm' translates into clinical practice and patient care.

For online graduate programmes in the health sciences, concerns about academic misconduct are more complex. McKenzie (1998) referred to the Internet as an 'Electronic shovel that makes it possible to find and save huge chunks of information with little reading, effort, or originality' (Introduction, para. 4). In a study by Kennedy et al. (2000), faculty and students believed it was easier to cheat online than in a face-to-face classroom. Further, graduate students perceived cheating to be easier in online classes than undergraduates did. As a result, Kennedy et al. (2000) predicted that academic misconduct would increase as online offerings increased. In a different study, however, Grijalva, Nowell, and Kerkvliet (2006) found the level of academic misconduct in online classes was not statistically different from face-to-face

classes and the authors concluded there was no evidence that academic misconduct in online courses would increase as offerings expanded. Spaulding (2009), using the survey on which the present study is based (Hard, Conway, and Moran 2006), found no difference in self-reported dishonest behaviour between online and face-to-face students.

Although the academic community knows that plagiarism, cheating and falsification of data occur, the factors that cause academic misconduct are not fully understood. Whitley (1998) found procrastination and perception of workload were associated with academic misconduct and that academic misconduct was compounded by a competitive environment. However, Whitley (1998) also suggested that students simply 'do not understand the limits of acceptable behaviour' (p. 263) and that the social distance between an instructor and students could contribute to academic misconduct, which may have implications for online programmes.

In reviewing the research from 1990–2000, McCabe, Trevino, and Butterfield (2001) underscored the importance of contextual variables (e.g. peer cheating, peer disapproval, penalties) and note that the influence of these is significantly greater than for individual factors (e.g. GPA, sex, age). The McCabe, Trevino, and Butterfield (2001) review reinforced the need of colleges and universities to create a culture of academic integrity shared by faculty, students and administration.

However, even if an institution has academic misconduct policies to promote academic integrity, without consistent institutional enforcement the burden shifts to instructors. Therefore, understanding the relationship between perceptions of students and faculty about academic misconduct and comparing perceptions with self-reported behaviour are necessary to promote a culture of academic integrity. Hard, Conway, and Moran (2006) surveyed 421 students and 157 faculty members at a single undergraduate institution about the prevalence of academic misconduct and self-reported behaviours of misconduct (students) and efforts to challenge offenders (faculty). The survey asked students about their frequency of various acts of academic misconduct and asked them to provide a rating for their perceptions of the frequency of those same acts as committed by other students. The surveyed faculty rated their perceptions of the frequency of the same acts of misconduct as committed by students and then self-reported their frequency of challenging students who they believed committed academic misconduct. Ninety per cent of students self-reported at least one instance of academic misconduct (Hard, Conway, and Moran 2006), which suggests that nearly all students cheat but rarely do so. Further, there was a positive correlation ($r = .35$) between self-reported behaviour and perceptions of misconduct by other students, indicating students overestimated the prevalence of academic misconduct (Hard, Conway, and Moran 2006). Such overestimation may lead students to engage in misconduct themselves, under the belief that 'everyone else is doing it'. Among faculty, few instructors confronted students or challenged work believed to be a product of academic misconduct (Hard, Conway, and Moran 2006). This result suggests most academic misconduct was overlooked even though the faculty perceived misconduct as more prevalent than it was. However, Keith-Spiegel et al. (1998) found 70% of 129 instructors surveyed strongly agreed or generally agreed that dealing with cheating students was one of the most negative aspects of their jobs, which may explain the results of Hard, Conway, and Moran (2006).

Given the results of the study by Hard, Conway, and Moran (2006), students may be more likely to engage in academic misconduct if they believe peers frequently engage in the same behaviour. To create a culture of academic integrity, institutions should create clear policies so students do not overestimate academic misconduct and, thus, engage in academic misconduct because they think everyone else is. Faculty can contribute to academic integrity by challenging and confronting student misconduct. When faculty overlook academic misconduct, it may appear that they tacitly permit misconduct. Faculty can also contribute to academic integrity by frequently redesigning tests and assignments, stating academic integrity policies in the syllabus, and engaging in other practices to minimise misconduct. To pursue a strong culture of academic integrity at our institution, we surveyed students and faculty about academic misconduct, specifically plagiarism. For the purposes of this study, plagiarism was defined as students taking someone else's work or ideas and passing them off as their own without appropriate attribution. Plagiarism can present in multiple forms such as students handing in work

that is not their own and putting their name on it, or cutting and pasting from any source (journal, website, paper) and inserting text directly into their paper without referencing. The primary purpose of the present study was to assess student and faculty perceptions of plagiarism. The secondary purpose was to explore differences in plagiaristic behaviours, and knowledge of university plagiarism standards between on-campus and online students and faculty.

Methods

The present study used a cross-sectional survey design. Data were collected from students and full-time and adjunct graduate faculty at a two-campus health sciences university comprised of two osteopathic medical schools, two dental schools, an online college of graduate health studies, and a school of health sciences. The university offers entry-level, post-professional, campus-based, hybrid and online programmes, and confers both master's and doctoral degrees. The university is located in the United States and its enrolment is approximately 3200 students from 35 countries. The ages of enrolled students range from the early 20s to over 65 years. The present study was approved by the university's institutional review board.

Participants

All current students ($n = 3314$) and faculty ($n = 245$) were invited to participate in an anonymous survey administered via SurveyMonkey.com. A link to the survey instrument was sent to students and faculty in an e-mail invitation in autumn 2013. A follow-up reminder e-mail was sent one week after the initial e-mail invitation. The survey instrument was closed after six weeks and data were downloaded for analysis.

Survey instruments

Two survey instruments were developed for the present study: one for students and one for faculty. Both instruments included questions about demographic characteristics, such as age, sex, ethnicity, English as first language, school affiliation within the university, current degree programme, and mode of instruction in the current programme (campus-based, online, hybrid). Students and faculty were asked to rate their level of knowledge about plagiarism standards at the university using a 5-point Likert scale (1 = I know nothing, 5 = I know a lot) and to identify the sources of this information from a list (e.g. university student handbook, school catalogue, course syllabi).

Nine plagiaristic behaviours were measured (Table 1). Items 1–4 were modelled after the survey developed by Hard, Conway, and Moran (2006), and items 5–9 were developed for the present study based on the student population under examination and the observations of the university's Writing Centre of the most common plagiaristic behaviours. The student survey measured the frequency with which students engaged in the nine behaviours in Table 1, with the question stem, 'How frequently

Table 1. Plagiarism Survey Items.

1.Submitted all, or part of, another student's work as original work
2.Worked closely with another student on material to be submitted for academic evaluation when the instructor had not authorised it
3.Submitted the same document, or parts of a document, for a grade when the document was originally prepared for a different course
4.Copied content directly from a source and did not use quotation marks or provide a page or paragraph number
5.Copied sentences or paragraphs from a website and submitted it as original work
6.Knowingly copied content directly or in slightly modified form from one source, but cited and attributed it to a different source
7.Cited and referenced a source that not actually retrieved and read
8.Cited and referenced a full text source when only the abstract was read
9.Knowingly altered information in a reference (date, URL, title, journal, page numbers, etc.)

have YOU engaged in each behaviour while a student at [University]?' Using the same nine items, students were also asked a separate question, 'How frequently do you believe OTHER [University] students typically engage in each behaviour?' In this manner, students' self-reported plagiaristic behaviours, as well as students' perceptions about other students' plagiaristic behaviours, were assessed.

Faculty were asked the frequency with which students in their classes had engaged in the nine plagiaristic activities in Table 1: 'While teaching [University] courses, have you suspected these behaviours were occurring in your class(es)?' Using the same nine items, faculty were also asked, 'How frequently do you believe the typical [University] student engages in each behaviour?' In this manner, faculty perceptions of behaviours in their courses, as well as among the general student population at the university, were assessed. The response scale allowed for one response per item and used the following response categories: Never, Seldom (1–2 times), Occasionally (3–4 times), Often (5–10 times), Very often (more than 10 times)

Data analysis

Data were downloaded into IBM SPSS Statistics version 21.0 for analysis. Frequencies, percentages, means and standard deviations were calculated on all variables as appropriate. Mann–Whitney tests with α set to 0.05, two-tailed, were used to compare self-rated knowledge of students and faculty about university plagiarism standards. χ^2 tests were used to compare the percentage of campus-based versus online students who reported engaging in specific plagiaristic activities occasionally, very often, or often. Because of the small numbers of respondents, student and faculty in hybrid programmes were excluded from comparison analyses.

Results

A total of 314 (9.5%) students and 101 (41.2%) of faculty responded to the survey. Of these respondents, 19 students and nine faculty members did not answer any of the plagiarism questions and were excluded. In addition, given a low number of masters students ($n = 57$), the analysis was limited to only doctoral students. Therefore, survey responses from 238 doctoral students and 92 faculty members were analysed (total $n = 330$).

Demographic characteristics of survey respondents are summarised in Table 2. Students and faculty from all schools at the university completed the survey. The percentage of campus-based students who completed the survey was similar to the combined percentages of online and hybrid students who completed the survey. On average, faculty who completed the survey had been employed at the university for seven years.

There was no statistically significant difference between student and faculty self-rated knowledge about university plagiarism standards. Sixty-two per cent of faculty and 60% of students rated their knowledge as a 4 or 5 on the 5-point rating scale (Pearson χ^2 (4, $n = 328$) = 4.37, $p = 0.36$). Self-rated knowledge of university plagiarism standards was higher among online students and faculty compared with campus-based students and faculty (Figure 1). Students and faculty identified the same top three sources of information about the university's plagiarism standards: course syllabi, programme student handbook and university student handbook (Table 3). More faculty than students got information on plagiarism standards from school catalogues ($p = 0.001$) and university writing centre handouts ($p = 0.01$). Conversely, more students than faculty got the same information on the university website ($p = 0.02$).

While few students self-reported plagiaristic behaviours, more perceived that their peers engaged in plagiaristic behaviours (Figure 2). The most common perceived behaviour among typical students was citing and referencing a full text source when only the abstract was read; this was also the most commonly self-reported behaviour among students. The next highest self-reported behaviours were submitting work prepared for a different course and working with another student when this was not authorised by the instructor.

Table 2. Characteristics of student and faculty survey respondents.^a

	Students (<i>n</i> = 238)	Faculty (<i>n</i> = 92)
Mean age ± SD, y	32.9 ± 10.5	50.0 ± 11.1
Sex		
Male	97 (40.8)	41 (44.6)
Female	138 (58.0)	50 (54.3)
Missing	3 (1.3)	1 (1.1)
Ethnicity ^b	3 (1.3)	2 (2.2)
American Indian/Alaska Native		
Asian	20 (8.4)	1 (1.1)
Black/African American	9 (3.8)	0
Native Hawaiian/Pacific Islander	6 (2.5)	0
Hispanic	15 (6.3)	4 (4.3)
White/Caucasian	193 (81.1)	89 (96.7)
Other Ethnicity	7 (2.9)	0
English is first language	220 (92.4)	90 (97.8)
School		
Dental	21 (8.8)	12 (13.0)
Health sciences	100 (42.0)	40 (43.5)
Medical	100 (71.4)	19 (20.7)
Health management	15 (6.3)	21 (22.8)
Missing	2 (0.8)	0
Mode of instruction		
Campus-based	131 (55.0)	45 (48.9)
Online	93 (39.1)	38 (41.3)
Hybrid	14 (5.9)	9 (9.8)
Mean years at university ± SD (faculty only)	–	7.3 ± 6.8

^aValues reported as No. (%) unless otherwise noted.

^bRespondents could mark more than one response.

Abbreviation: SD, standard deviation.

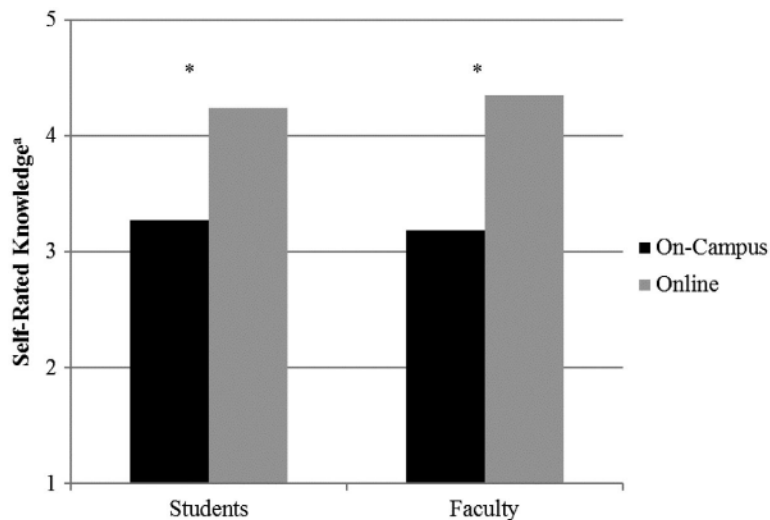


Figure 1. Mean self-rated knowledge of university plagiarism standards.

^aSelf-rated knowledge was rated as 1 = I know nothing to 5 = I know a lot. **p* < 0.001 based on Mann–Whitney test.

Compared with students, faculty perceived plagiaristic behaviours to be much more common. As shown in Figure 3, 75% of faculty felt that typical students cited and referenced a full text source after only reading the abstract, and 70% felt that typical students copied content and did not quote or cite correctly. Over half of faculty suspected these behaviours among students in their courses. Copying

Table 3. Sources of information about university plagiarism standards.

	Students, No. (%)	Faculty, No. (%)	<i>p</i> value ^a
Programme student handbook	124 (52.1)	57 (62.0)	0.11
University student handbook	132 (55.5)	57 (62.0)	0.29
Course syllabi	198 (83.2)	70 (76.1)	0.14
Programme guide or other programme documents	43 (18.1)	22 (23.9)	0.23
School catalogue	26 (10.9)	24 (26.1)	0.001
University writing centre handout	30 (12.6)	22 (23.9)	0.01
University writing centre website	39 (16.4)	24 (26.1)	0.04
University website	55 (23.1)	11 (12.0)	0.02
Have not read any information	22 (9.2)	3 (3.3)	0.07
Have not seen any information	9 (3.8)	6 (6.5)	0.28

^aPearson χ^2 test was used to calculate *p* values.

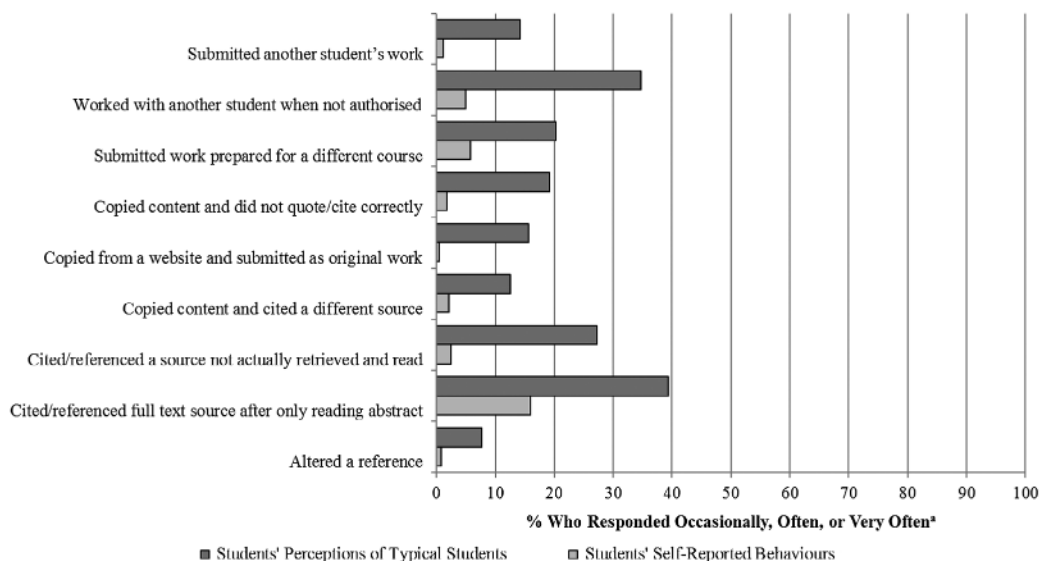


Figure 2. Students' self-reported plagiarism behaviours and perceptions of plagiarism behaviours among typical students at the university. ^aValid percentage who responded occasionally, often, or very often reported.

information from a website and submitting it as original work was also perceived by faculty as common among typical students as well as among students in their courses.

Working closely with another student on material to be submitted for academic evaluation when the instructor had not authorised it was more common among campus-based students than among online students (8% vs < 1%, *p* < 0.001). All other self-reported behaviours were similar between campus-based and online students.

Discussion

The results of the present study suggested that graduate faculty perceptions of plagiaristic activities among health sciences students were higher than self-reported behaviours of doctoral students at the same institution. In other words, faculty believe students are plagiarising, but students do not admit doing so. Our results are similar to the findings of Hard, Conway, and Moran (2006) that faculty perceived misconduct as more prevalent than students self-reported, but different from Montuno et al. (2012), who did not find such differences.

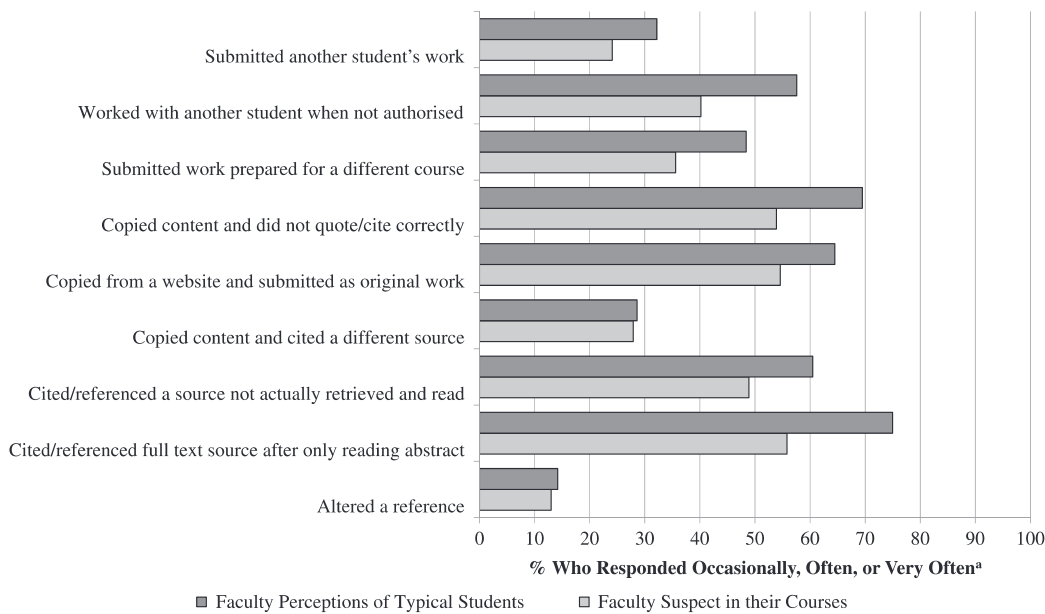


Figure 3. Faculty perceptions of plagiarism behaviours among students in their courses and among typical students at the university. ^aValid percentage who responded occasionally, often or very often reported.

Another finding of the present study was that doctoral students and graduate faculty perceived plagiaristic activities were more common among typical university students compared with their own behaviour (students) or with behaviour in their courses (faculty). This is likely partially due to social desirability bias. This finding was supported by previous studies (Hard, Conway, and Moran 2006; McCabe and Trevino 1997), which found student behaviour was influenced by perceptions of peer behaviour. As a result, students were more likely to engage in academic misconduct when they perceived their peers were doing so or when they perceived their peers considered the behaviour acceptable. Therefore, to improve academic integrity, institutions should increase student awareness about the prevalence of plagiaristic behaviour among the general student population to ensure that students are not overestimating the occurrence of plagiarism or incorrectly believing that it is acceptable.

In the present study, we also found differences in the self-rated knowledge of the plagiarism standards of the university between campus-based and online doctoral students and between campus-based and online graduate faculty. Studies by Kennedy et al. (2000) and by Hard, Conway, and Moran (2006) found that faculty and students thought it was easier to cheat online than in a face-to-face classroom. However, Grijalva, Nowell, and Kerkvliet (2006) found no evidence that suggested academic misconduct was more prevalent online than in a face-to-face classroom. Our result that self-rated knowledge about plagiarism was significantly higher among online students and faculty than among campus-based students and faculty supports the findings of Grijalva, Nowell, and Kerkvliet (2006). These differences in mode of instruction (campus-based vs online) may arise from increased screening and follow-up policies regarding plagiarism in the online setting. Therefore, to improve academic integrity, institutions should consider implementing similar screening and follow-up policies in other academic programmes to ensure that all students and faculty are aware of standards regarding plagiarism.

Another difference we found between campus-based and online students was that more campus-based students reported working closely with another student on material to be submitted for academic evaluation when the instructor had not authorised it. Other studies have found that students do not perceive working with others when individual work is expected as a serious cheating offence (Dereczyk et al. 2010; Montuno et al. 2012). Given that students see each other regularly in the

campus-based setting, this difference was not surprising and may represent an area for educational opportunities in the campus-based programmes.

In the present study, some items measuring plagiaristic behaviours were modelled after Hard, Conway, and Moran (2006), while other items were developed specifically for this study. Therefore, a limitation of the study is lack of a fully validated survey instrument. In addition, the sample size was small and response rates were low, especially for students, and only doctoral level students were included in analysis due to low response rate among masters students. The reason for the low response rate is unknown.

Another limitation is that the study surveyed students and faculty from a single university, which affects the generalisability of our results. Further, we included full-time and adjunct faculty in the study. This inclusion of all faculty may have affected our results because adjunct faculty, who typically teach fewer courses, may not have as much experience or commitment in determining and reducing plagiarism as full-time faculty.

Although results from the present study are informative, additional research is necessary. For instance, this study could be repeated as a multi-campus study by surveying students and faculty from multiple universities. Another study could compare perceptions between campus-based and online students and between full-time and part-time faculty. A longitudinal study of student perceptions before and after health sciences education could be useful to assess changes in perceptions of academic misconduct and academic integrity over time. Results from such a study may be helpful for designing strategies that enhance academic honesty.

Results of the present study suggested that doctoral students and graduate faculty at one university differ substantially in their perceptions of the occurrence of plagiarism among the general student population. These differences in perception have implications for efforts to reduce the prevalence of academic misconduct; for such efforts to be successful, faculty and student perceptions must be congruent (Montuno et al. 2012, 252).

In conclusion, our research findings were consistent with results from previous studies and support the need for additional research into student and faculty perceptions of academic misconduct. To improve academic integrity at all educational institutions, new policies, standards and educational practices need to be developed, with a focus on establishing a common definition of academic integrity among all stakeholders.

Disclosure statement

To the best of the four authors' knowledge, there is no financial interest or potential conflicts of interest in the manuscript.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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