7-15-2019

Establishing Similarities and Differences among the Self-Reported Academic Integrity of Australian Occupational Therapy Undergraduate and Graduate-Entry Master's Students

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Abstract

Background: Research into the prevalence of dishonest academic behaviors suggests that such behaviors may be extensive in higher education. This study investigated the academic integrity of Australian occupational therapy students and compared the perspectives of undergraduate (UG) and graduate-entry master's (GEMs) students.

Method: Students from five Australian universities (701; response rate 35%; 72.5% female) completed five standardized scales: (a) *Academic Dishonesty Scale; (b) Academic Dishonesty in the Classroom Setting Scale; (c) Academic Dishonesty in the Clinical/Practice Education Setting Scale; (d) Academic Dishonesty Tendency Scale;* and *(e) Perceived Academic Sources of Stress.* One-way analyses of variance were conducted to compare the scores of the UG and GEMs students.

Results: No significant differences were found on the UG ($n = 609$) and GEMs ($n = 92$) students' self-reported scores in academic dishonesty in the classroom and practice education settings. Significant differences were noted between the UG and GEMs students on self-reported tendency toward dishonesty in providing appropriate references, on workload and examinations, and self-perception. Overall, low rates of academic integrity breaches were reported by occupational therapy UG and GEMs students, but they are still present.

Conclusion: Occupational therapy UG and GEMs students report good levels of academic integrity in the classroom and practice education settings, although areas of concern in academic integrity were identified. Educators should facilitate the development and awareness of academic integrity among UG and GEMs occupational therapy students.

Comments

The authors report that they have no conflicts of interest to disclose.

Keywords

academic integrity, academic dishonesty, cheating, occupational therapy education

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Occupational therapy practitioners and educators believe that strong associations with ethical behavior and conduct apply to professionals across all work environments. Students entering the profession are also bound by the profession's ethical standards; however, few studies have investigated the ethical behavior, or academic integrity, of students relating to their qualifying degree (Savin-Baden, 2005). Academic integrity is defined as the use, generation, and communication of information in an ethical, honest, and responsible manner (Bretag, 2018; International Center for Academic Integrity & Fishman, 2013). It is the moral code of academia whereby students and academic staff express their own ideas in assignments and research projects, cite all sources of information, complete assessment tasks independently or acknowledge collaboration when it occurs, report findings accurately, and display trustworthiness during examinations (Michigan State University, 2015). Acts of academic dishonesty are behaviors whereby students seek to gain an unfair advantage for themselves or others in a course or unit of study. Examples of misconduct in the classroom setting include copying or giving answers in examinations; providing test questions to another student on completion of an examination; using technology to access test banks; unauthorized collaboration on assessable written, oral, or practical work; and plagiarism (Harper, 2006; Kenny, 2007; Klocko, 2014). In the clinical setting, dishonest behaviors can include falsifying test results, breaking patient confidentiality, and recording assessments that were not actually carried out (Austin, Collins, Remillard, Kelcher, & Chui, 2006; Balik, Sharon, Kelishek, & Tabak, 2010; Krueger, 2014).

Evidence suggests that many students do not see their actions as out of the ordinary or morally wrong, and there are concerns that students may normalize dishonest behaviors and integrate them as part of their academic culture (Arhin & Jones, 2009; Josien & Broderick, 2013; McCabe, Trevino, & Butterfield, 2001). Studies have also established links between violations of honesty in the classroom and incidences of unethical professional practice committed by students found to be academically dishonest (Laduke, 2013; Lynch et al., 2017). In the context of occupational therapy, this has serious implications because of the care responsibility required by many roles and the rigorous ethical standards expected of occupational therapists (Kenny, 2007).

The body of literature on academic integrity and students' engagement in dishonest behaviors is considerable, with numerous large-scale studies from the United States and elsewhere demonstrating the prevalence of academic dishonesty among university students. Rates have been consistently estimated at over 40%, and extensive research conducted by the International Center for Academic Integrity between 2002 and 2015 concluded that the number of students who admit to some form of cheating is widespread across all sectors of higher education (Aggarwal, Bates, Davies, & Khan, 2002; Arhin & Jones, 2009; Azulay Chertok, Barnes, & Gilleland, 2014; Bates, Davies, Murphy, & Bone, 2005; Henning et al., 2012). Based on samples of 17,000 graduate students and 71,300 undergraduate students from the United States and Canada, 43% and 68%, respectively, disclosed that they had cheated on written assignments or examinations (McCabe, 2015). High levels of academic dishonesty have also been recorded at the high school level, suggesting that such behaviors in students develop at an early stage. This has worrying implications for students transitioning into further education, where evidence suggests that students accept some forms of cheating as the social norm and justify their engagement in dishonest behaviors as a function of the learning and education environment (Birks, Smithson, Antney, Zhao, & Burkot, 2018; Montuno et al., 2012).

There is evidence that students at the university level engage in a wide range of dishonest behaviors, from the more traditional forms of cheating, such as referring to hidden notes in closed-book examinations, to new methods that reflect the ease with which information can now be

communicated and disseminated via handheld technology and communication devices. There is an abundance of research on plagiarism linked to the ubiquitous availability of online technology that enables easy cutting and pasting of original source material into essays and assignments as well as the purchasing of custom-written essays and paraphrasing tools (Curtis & Popal, 2011; McCabe, 2009; Ryan, Bonanno, Krass, Scouller, & Smith, 2009; Tanner, 2004). The use of email and messaging services also allows easy and rapid distribution of test questions from students who have already completed a test to others who may be writing it later in the day or the following day. While the benefits of online-based learning in facilitating educational advances are significant, the alternative view is that technology makes it easier for students to engage in modes of academic dishonest behavior that are more difficult for academic and fieldwork educators to detect and monitor (Azulay Chertok et al., 2014; Lathrop & Foss, 2001).

According to McCabe, peer behavior is the most influential factor in determining whether a student will cheat, where a perception that "everyone is doing it" fosters an environment or culture that is conducive to cheating (McCabe & Trevino, 1997). When there is competition for grades, students feel they need to engage in cheating even when they know their actions are fraudulent (Woith, Jenkins, & Kerber, 2012). This can have a deleterious effect on personal integrity and on students' moral and ethical development, and it discourages students from taking responsibility for their own academic integrity and related decision-making, behaviors, and actions. Allied with emerging evidence linking unprofessional student behaviors and unethical behaviors following graduation in the medicine, nursing, and physical therapy professions, an emphasis on academic integrity and professional conduct in entry-to-practice education is paramount (Colliver, Markwell, Verhulst, & Robbs, 2007; Krueger, 2014; Papadakis, Arnold, Blank, Holmboe, & Lipner, 2008). It is important that educators "recognize that cheating is a life behavior that begins early and tends to perpetuate into professional education and subsequent practice and employment" (Mohr, Ingram, Fell, & Mabey, 2011, p. 51).

There is a significant body of research investigating academic integrity among cohorts of other health professional students (Graham, Knight, & Graham, 2016; Krueger, 2014; Marusic, Wager, Utrobicic, Rothstein, & Sambunjak, 2016; Mohr et al., 2011; Papadakis, Hodgson, Teherani, & Kohatsu, 2004). For example, in an integrative review of 20 studies involving plagiarism in nursing students, Lynch et al. (2017) noted that "plagiarism is common among university nursing students, with a difference in perception of this behaviour between students and academics" (p. 2845). To date, there have been no studies involving occupational therapy students internationally or in Australia. Therefore, there is a need to determine the extent to which occupational therapy students engage in academic dishonesty, the differences and similarities that exist between years of study, and the reasons why students may engage in dishonest behaviors. The findings will assist academic and fieldwork educators to establish baselines of academic integrity and academic dishonesty among undergraduate (UG) and graduate-entry master's (GEMs) students. Findings may inform curriculum planning, design, and implementation and could identify aspects of academic integrity that should be targeted as areas for improvement in the classroom and practice education settings.

The need to investigate academic integrity among occupational therapy students is timely and warranted. This study aimed to investigate the academic integrity of UG and GEMs occupational therapy students and explore the potential differences of academic integrity among students based on student demographic and self-report variables. The research questions were: (a) are there significant differences among UG and GEMs students on measures of academic success, hours of direct class time, hours of independent study, and hours in paid employment and the relationship to academic

integrity? and (b) are there any significant difference between the classroom and fieldwork academic integrity of UG and GEMs occupational therapy students?

Method

Design

A cross-sectional survey research design using self-report questionnaires was used to collect the data in this study.

Participants

UG and GEMs occupational therapy students enrolled at Monash University, Australian Catholic University, La Trobe University, the University of Canberra, and the University of Queensland were recruited. Student participation in the study was voluntary. Ethics committee approval for this project was sought from Monash University, Australian Catholic University, La Trobe University, the University of Canberra, and the University of Queensland.

Monash University and the University of Queensland offer both UG and GEMs occupational therapy courses, whereas Australian Catholic University offers UG occupational therapy courses at three locations (Melbourne, North Sydney, and Brisbane) and the University of Canberra offers only a GEMs course. La Trobe University offers a GEMs program and a double degree, which includes a master's. We recruited 701 participants consisting of 609 (86.9%) UG students and 92 (13.1%) GEMs students. The response rate for the number of UG and GEMs students was 35%.

Instrumentation

The students were asked to complete either an online or paper-based self-report questionnaire composed of two sections to elicit information about their academic integrity. The first section contained demographic questions where students were asked to report their year level of enrollment, gender, age, student status (whether full-time or part-time, or domestic or international), academic grade point average, and how many hours per week they spent engaged in direct study, indirect study, and paid work. The second section consisted of six standardized scales.

Academic Dishonesty Scale (ADS). The ADS consists of 14 items where participants are asked to rate the degree of academic dishonesty on a 5-point Likert scale, where 1 represents *completely dishonest* and 5 represents *completely honest* (McCabe & Trevino, 1997). Examples of items include: copying from another student during a test and using material from a published source in a paper without giving the author credit. A composite score was generated by adding the ratings together to calculate an overall total academic dishonesty cheat score. This scale has previously reported reliability and evidence of its validity (McCabe & Trevino, 1997; McCabe, Trevino, & Butterfield, 2001). Internal consistency with a Cronbach alpha coefficient of 0.83 has been reported (McCabe & Trevino, 1993). The concept being investigated by the ADS was the degree of students' academic dishonesty and cheating.

Academic Dishonesty in the Classroom Setting Scale (ADCS). The ADCS is composed of 20 items that describe different academic behaviors that students may or may not engage in at the university setting (Krueger, 2014). Respondents rate each behavior in relation to the frequency in which they have engaged in it (ranging from 1 *never* to 5 *very often*) and how serious they regard the behavior (1 *not serious at all* to 5 *very serious*). The ADCS can be used to calculate a total academic dishonesty in the classroom setting cheat score, a mean academic dishonesty in the classroom setting cheat frequency score, and a mean academic dishonesty in the classroom setting seriousness rating score. Examples of items include: getting test questions from another student who has taken the examination at an earlier time and working with another student on an out-of-class assignment when it should be an individual task and collaboration was not allowed by the tutor. The ADCS was scored using a percentage of responses for each category. Evidence of the scale's reliability and validity has

been reported previously (Krueger, 2014; McCabe, 2009; McCabe et al., 2001; McCrink 2008; McCrink, 2010). Cronbach alpha coefficients for the ADCS in the current study were found to be all above 0.85. The concepts being investigated by the ADCS were the degree of students' academic dishonesty and cheating in the classroom settings, the frequency of students' academic dishonesty and cheating in classroom settings, and the perceived seriousness by students of academic dishonesty and cheating in classroom environments.

Academic Dishonesty in the Clinical/Practice Education Setting Scale (ADCPES). The ADCPES instrument comprises nine items that describe different academic behaviors that students may or may not engage in while in practice education settings (Krueger, 2014). Respondents record the frequency in which they have engaged in the behavior on a 5-point Likert scale (1 = *never*; 5 = *very often*) and how seriously they regard the behavior (1 = *not serious at all*; 5 = *very serious*). The ADCPES can be used to calculate a total academic dishonesty in the fieldwork setting cheat score, a mean academic dishonesty in the fieldwork setting cheat frequency score, and a mean academic dishonesty in the fieldwork setting seriousness rating score. Examples of scale items include: reporting assessment results that were not completed and going to the clinical area and providing patient care under the influence of drugs (including alcohol). Scores were generated using a percentage of responses for each category. Evidence of the ADCPES's reliability and validity has been previously reported (Krueger, 2014; McCrink 2008; McCrink, 2010). Cronbach alpha coefficients for the ADCPES in the current study were found to be all above 0.80. The concepts being investigated by the ADCPES were the degree of students' academic dishonesty and cheating in practice education settings, the frequency of students' academic dishonesty and cheating in practice education settings, and the perceived seriousness by students of academic dishonesty and cheating in practice education contexts.

Academic Dishonesty Tendency Scale (ADTC). The ADTC is 22-item scale designed to examine the tendencies of university students toward academic dishonesty behaviors (Eminoglu & Nartgun, 2009). Explanatory and confirmatory factor analysis was used to generate four subscales: Subscale 1: Tendency toward cheating; Subscale 2: Tendency toward dishonesty in assignments, essays, and studies, such as projects – general; Subscale 3: Tendency toward dishonesty in the process of doing and reporting research; and Subscale 4: Tendency toward dishonesty in providing appropriate references and acknowledgements (Eminoglu & Nartgun, 2009). Respondents' rate items using a 5-point Likert scale with 1 corresponding to *strongly agree* and 5 corresponding to *strongly disagree*. Item examples include: It is harmless to ask for the help of other students during exams; students should not give other students research reports they have completed on the same topic, even if they have different lecturers for the unit, and it is plagiarism to use others' authentic ideas and thoughts without providing appropriate references to acknowledge their intellectual property (Eminoglu & Nartgun, 2009).

Items for each subscale are added up for a total score and then divided by the number of items to generate an average or mean rating score for each of the four subscales, rated from *very low* (1.00-1.79) to *very high* (4.20-5.00) (Eminoglu & Nartgun, 2009). Evidence of the scale's reliability and construct validity have been reported. Cronbach alpha coefficients for the four subscales ranged from 0.71 to 0.90 and test-retest reliability over a 15-day duration was 0.88 (Eminoglu & Nartgun, 2009). The concepts being investigated by the ADTC were four aspects of university students' tendencies toward academically dishonest behaviors: (a) tendency toward cheating; (b) tendency toward dishonesty in assignments, essays, and studies, such as projects – general; (c) tendency toward dishonesty in the process of doing and reporting research; and (d) tendency toward dishonesty in providing appropriate references and acknowledgements.

Perceived Academic Sources of Stress (PASS). The PASS scale was designed to measure perceived sources of academic stress among university students (Bedewy & Gabriel, 2015). Students are asked to rate 18 items that describe perceived sources of stress among university students by rating their level of agreement on a 5-point Likert scale, where 1 represents *complete agreement* with the statement and 5 represents *complete disagreement*. Examples of the items include: I am confident that I will be a successful student, the size of the curriculum (workload) is excessive, and competition with my peers for grades is quite excessive. Evidence of the scale's reliability and validity have been reported (Bedewy & Gabriel, 2015). Factor analysis established that the scale's items loaded onto four factors: Factor 1: Pressures to perform, Factor 2: Perceptions of workload and examinations, Factor 3: Self-perceptions, and Factor 4: Time restraints (Bedewy & Gabriel, 2015). Cronbach alpha coefficients for the four subscales ranged from 0.50 to 0.60 (Bedewy & Gabriel, 2015). The concepts being investigated by PASS were four factors related to university students' perceived sources of academic stress: (a) pressures to perform; (b) perceptions of workload and examinations; (c) self-perceptions; and (d) time restraints.

Procedures

The participants completed the questionnaire either via a hard-copy or online version. Students enrolled at Monash University, the University of Queensland, and La Trobe University - Bendigo campus were asked to complete a hard copy of the self-report questionnaire at the end of a lecture by a non-teaching member of the staff. The students enrolled at the Melbourne, Sydney, and Brisbane campuses of Australian Catholic University and at the University of Canberra and La Trobe University - Melbourne campus were informed about the study by an explanatory statement posted in online learning units and an email sent to them with a link to an online version of the questionnaire. The students were informed that completing the online version of the questionnaire was voluntary. The students completing and submitting the questionnaire inferred informed consent on their part. The anonymity of all of the participants was guaranteed since there was no identifiable information on the questionnaires and data was analyzed on a group basis. The questionnaire was piloted with two UG and two GEMs students.

Data Management and Analysis

The data was downloaded to Microsoft Excel™ from the online survey and then transferred into SPSS or entered directly into SPSS version 22.0 (IBM Corporation, 2013). Data were analyzed using descriptive statistics and ANOVAs with the aim of investigating and determining if differences between the UG and GEMs occupational therapy students existed on the topic of academic integrity as measured by the ADS, ADCS, ADCPES, MDSP, ADTC, and PASS. To complete an ANOVA analysis with multiple variables compared, the sample size is important because it affects the statistical power plus the generalizability of the findings. Therefore, a resampling technique referred to as "bootstrapping" was used (Chernick, 2007). Bootstrapping is a type of robust statistic that infers a population from sample data (Davison & Hinkley, 1997). By taking, with replacement, the values from the original sample to obtain thousands of bootstrapped samples, the accuracy of the confidence interval (CI) estimation for one or more statistics can be improved (Walters & Campbell, 2004). When performing bootstrapping, it is assumed that the original sample reasonably represents the population (Walters & Campbell, 2004).

Results

Demographic Findings

The demographic findings are reported in Table 1. The sample was predominantly female students (72.5%) and most of the participants were enrolled as domestic students (86%). In the UG

group, 88% were aged 17 to 24 years while most of the GEMs students were older and spread across the 20 to 24 (37%) and 25 to 29 (38%) year age ranges.

Details of the self-reported grade point averages (GPA) and time spent in academic study and paid work are presented in Table 2. The UGs' self-reported GPAs were in the 60-69 (34.65%) and 70-79 (37.11%) percentage range, and the largest portion of the GEMs students was in the 60-69 (47.82%) percentage range. In relation to hours engaged in education, study, and paid work, the GEMs students spent more hours per week in face-to-face education (lectures, tutorials, and practical skills classes), independent study, and paid work than the UG student group. A significant difference was observed at the $p < .05$ level for self-reported GPA [$F (1, 699) = 14.49$, $p = .001$] and hours per week of indirect time spent working on and studying material related to students' education [$F(1, 699) = 17.19$, $p = .001$] between the UG and GEMs students.

Table 1
Demographic Data (Undergraduate Students, n = 609; Graduate-entry Master's Students, n = 92)

Year of Enrollment	Frequency	Percentage		
1st year undergraduate	172	28.2		
2nd year undergraduate	164	26.9		
3rd year undergraduate	167	27.4		
4th year undergraduate	106	17.4		
1st year GEMs	47	51.1		
2nd year GEMs	45	48.9		
Age range	**Undergraduates**	**GEMs**		
17-19 years	172	28.2	1	1.1
20-24 years	364	59.8	34	37.0
25-29 years	36	5.9	35	38.0
30-34 years	13	2.1	11	12.0
35-39 years	8	1.3	2	2.2
40 years or older	16	2.6	9	9.8
Gender				
Male	167	27.4	26	28.3
Female	442	72.6	66	71.7
Enrollment Category				
International student	83	13.6	15	16.3
Domestic student	526	86.4	77	83.7

Note. GEMs: graduate-entry master's.

Table 2
Self-Reported Grade Point Average (GPA) and Time Spent in Direct Education, Indirect Study, and Paid Work (Undergraduate Students, n = 609; Graduate-entry Master's Students, n = 92)

	Undergraduates		GEMs		
GPA**	**Number**	**%**	**Number**	**%**	***P = 0.001***
< 49%	7		4		
50-59%	40	1.15	14	15.22	
60-69%	211	34.65	44	47.82	
70-79%	226	37.11	27	29.25	
80-89%	110	18.06	3	3.26	
> 90%	15	2.46	4	4.35	

	Mean	SD	Mean	SD	
Hours per week in face-to-face education	14.75	± 5.258	14.93	± 7.953	$p = 0.777$
Hours per week dedicated to independent study	15.11	± 9.139	19.49	± 11.294	$p = 0.001*$
Hours per week of paid work	10.21	± 8.185	10.87	± 9.488	$p = 0.001*$

Note. GEMs: graduate-entry master's; SD: standard deviation.
* Represent statistically significant *p*-values ($p < 0.001$).
** Students were asked to report their GPA on a 6-point scale indicating their cumulative percentage mean of their academic overall grade average. The six rating categories were: (a) overall GPA percentage grade of < 49%, (b) overall GPA percentage grade between 50-59%, (c) overall GPA percentage grade between 60-69%, (d) overall GPA percentage grade between 70-79%, (e) overall GPA percentage grade between 80-89%, and (f) overall GPA percentage grade > 90%.

Academic Dishonesty

The comparative ADS total mean cheat scores are reported in Table 3. At the individual item level, 84.3% of all of the students regarded studying for exams with other students in the same course as an honest behavior (UG $M = 4.34$, $SD = 0.86$; GEMs M = 4.34, $SD = 0.86$). Preventing other students from copying you during a test was considered honest by 68.2% of the sample (UG $M = 3.89$, $SD = 1.11$; GEMs M = 3.96, $SD = 1.04$) and 59.7% regarded memorizing questions from quizzes that may appear in exams/tests (UG $M = 3.73$, $SD = 1.08$; GEMs $M = 3.70$, $SD = 0.87$) as an honest academic behavior. Keeping exam and test information private from students in later sessions or tutorials was considered an honest behavior by only 50.9% of all students (UG $M = 3.47$, $SD = 1.16$; GEMs $M = 3.58$, $SD = 1.09$).

A high proportion of students (91.1%) reported that copying material and submitting it as original work (UG $M = 1.36$, $SD = 0.81$; GEMs $M = 1.43$, $SD = 0.96$) was dishonest, and 90.8% regarded the use of material from published sources without due accreditation a dishonest practice (UG $M = 1.52$, $SD = 0.83$; GEMs $M = 1.64$, $SD = 0.98$). A high proportion of students, 90.2% and 90.7%, respectively, believed that both cheating on a test in any way (UG $M = 1.41$, $SD = 0.90$; GEMs $M = 1.61$, $SD = 1.49$) or copying from another student during a test (UG $M = 1.42$, $SD = 0.94$; GEMs $M = 1.51$, $SD = 1.09$) were dishonest practices. No significant differences in the mean scores across the ADS cheat scale were observed at the $p < .05$ level between the UG and GEMs students.

Academic Dishonesty in Classroom Settings

The ADSC mean total cheat scores are presented in Table 3. The UG and GEMs students overall mean total classroom setting cheat scores and mean reported rates of frequency and levels of seriousness were very similar. No significant differences were found between UG and GEMs students' ADSC mean total cheat scores ($p < .05$).

At the individual item level, 40.9% of students across the entire sample ($n = 701$) admitted to sometimes getting test questions from another student who had already taken the examination (UG $M = 1.64$, $SD = 0.80$; GEMs $M = 1.46$, $SD = 0.69$) and 37.5% reported that they had occasionally collaborated with other students on what were meant to be individual assignments (UG $M = 1.57$, $SD = 0.80$; GEMs $M = 1.61$, $SD = 0.82$). Obtaining test questions from past examinees was not considered a particularly serious example of academic dishonesty by both the UG and GEMs students: UG $M = 3.72$, $SD = 1.08$; GEMs $M = 3.68$, $SD = 1.15$. However, the UG students considered unauthorized collaboration with peers on individual assignments a more serious example of dishonest behavior than the GEMs students: UG $M = 4.26$, $SD = 1.03$; GEMs $M = 3.53$, $SD = 1.05$.

With regard to the inappropriate use of source materials, 36.1% of the UG and GEMs students self-reported as sometimes filling out reference lists with sources that were not actually used (UG $M = 1.62$, $SD = 0.88$; GEMs $M = 1.71$, $SD = 0.88$); 34.6% had occasionally paraphrased material from books,

journal articles, or websites without referencing the original source (UG $M = 1.49$, $SD = 0.75$; GEMs $M = 1.56$, $SD = 0.73$); and 20.3% had copied information directly from a website, book, or article without reference to the original source (UG $M = 1.45$, $SD = 0.71$; GEMs $M = 1.46$, $SD = 0.73$). The padding of bibliographies with uncited references was the least seriously regarded example of dishonest practice by both the UG and GEMs student groups (UG $M = 3.52$, $SD = 1.17$; GEMs $M = 3.36$, $SD = 1.11$) while copying material from a source without reference was rated as neutral (being neither an honest nor dishonest behavior) (UG $M = 3.87$, $SD = 1.07$; GEMs $M = 3.87$, $SD = 1.05$).

Practices, such as getting someone else to impersonate the student in a test (UG $M = 4.77$, $SD = 0.68$; GEMs $M = 4.87$, $SD = 0.50$) and using notes, books, and mobile phones in closed-book tests to seek answers (UG $M = 4.64$, $SD = 0.76$; GEMs $M = 4.58$, $SD = 0.73$) were rated by both sets of students as the most serious examples of dishonest practices. Across the sample, 94.7% and 93.2%, respectively, self-reported as never having engaged in these examples of academic dishonesty.

Academic Dishonesty in Practice Education Settings

The ADCPES fieldwork setting mean total cheat scores are reproduced in Table 3. The UG and GEMs students' overall mean fieldwork setting cheat scores and mean reported rates of frequency and levels of seriousness were very similar. No significant difference in the scores was observed at the $p < .05$ level between the UG and GEMs occupational therapy student groups.

The composite, frequency, and seriousness mean scores for the UG and GEMs occupational therapy student groups were nearly identical. At the individual item level, a high proportion of the respondents reported never having engaged in any of the listed dishonest behaviors in the practice setting and considered all of them as serious to very serious transgressions. For example, 94.2% claimed never to have reported patients' responses to treatments that had not been observed, with UGs and GEMs regarding it as a serious dishonest behavior (UG $M = 4.63$, $SD = 0.77$; GEMs $M = 4.64$, $SD = 0.65$). Similarly, 96% reported as never having attended to a patient under the influence of alcohol, which was viewed by both sets of students as a very serious offence (UG $M = 4.75$, $SD = 0.71$; GEMs $M = 4.79$, $SD = 0.59$). On one item, however, 31.9% of all students claimed to have discussed clients in public places or with non-medical personnel (UG $M = 1.29$, $SD = 0.61$; GEMs $M = 1.41$, $SD = 0.65$), which corresponds with the UG and GEMs students regarding this as the least serious dishonest behavior (UG $M = 4.45$, $SD = 0.88$; GEMs $M = 4.44$, $SD = 0.81$).

Academic Dishonesty Tendency Scale

The mean scores for the four ADTS subscales are presented in Table 3. The scores for both groups of students indicated high tendencies on the subscales measuring students' tendency toward cheating and dishonesty in the process of undertaking and reporting research. The UGs recorded a higher mean score on the ADTS tendency to cheat subscale, suggesting they are more likely to believe it is harmless to ask for other students help during exams or to share their answers with peers. The GEMs students scored higher on the ADTS subscale measuring the tendency to engage in dishonesty in research and reporting, such as making up data and submitting reports completed previously by another student as new research.

Medium ratings were ascribed to the UG and GEMs students' tendencies toward dishonesty in assignments and providing appropriate references and acknowledgements. The UG students scored higher on both subscales, suggesting a greater tendency than the GEMs to include information and documents from others as his or her own in homework tasks and quoting the work of others without due acknowledgement or reference. A statistically significant difference between the UG and GEMs student groups was observed at the $p < .05$ level on students' tendency toward dishonesty in providing appropriate references and acknowledgements [$F(1, 699) = 6.55$, $p = .011$]. No significant differences were found on the other three ADTS subscale scores.

Perceived Sources of Stress

The PASS subscale mean scores are reported in Table 3. The scores on PASS Factor 1: Pressures to perform and Factor 4: Time restraint were nearly identical for both groups of students, with the GEMs students recording marginally higher scores. The results suggest that the UG and GEMs students both experience moderate levels of stress in relation to examinations, competition with peers, and parental expectations. There were comparatively low levels of stress recorded on the PASS Factor 4: Time restraints subscale suggests that students in both groups felt that sufficient time was allocated to classes, they had enough time to relax outside of their academic studies, and that they were confident in their ability to catch-up if they found themselves falling behind with work.

The GEMs students' mean scores on the PASS Factor 2: Perceptions of workload and examinations and Factor 3: Self-perceptions subscales were higher than those for the UG students. The scores for both groups of students revealed that stress associated with the size of the curriculum, the amount of assigned work, and confidence in their academic abilities was only moderate. While no significant differences were found on the PASS Factor 1: Pressures to perform and Factor 4: Time restraints subscales, significant differences in the scores were evident on the PASS Factor 2: Perceptions of workload and examinations ($F(1, 699) = 8.99$, $p = .003$) and Factor 3: Self-perceptions ($F(1, 699) = 8.42$, $p = .004$) subscales between the two student groups.

Table 3

ADS, MDSP, ADTC, and PASS Comparative Mean Scores (Undergraduate Students, n = 609; Graduate-entry Master's Students, n = 92)

	UG Mean	UG SD	GEMs Mean	GEMs SD	*p-value*
ADS mean total cheat score	14.96	± 6.16	15.48	± 7.66	0.466
ADCS setting mean total cheat score	25.20	± 6.99	24.31	± 5.01	0.241
ADCS setting mean cheat frequency score	1.26	± 0.35	1.22	± 0.25	-
ADCS setting mean seriousness rating score	4.19	± 0.70	4.15	± 0.69	-
ADCPES setting mean total cheat score	10.02	± 2.76	10.01	± 1.63	0.982
ADCPES setting mean cheat frequency score	1.11	± 0.31	1.11	± 0.18	-
ADCPES setting mean seriousness rating score	4.59	± 0.64	4.57	± 0.57	-
ADTC Scale 1: Tendency towards cheating	3.83	± 0.52	3.79	± 0.44	0.481
ADTC Scale 2: Tendency towards dishonesty in assignments, essays, and studies such as projects	3.13	± 0.59	3.03	± 0.35	0.125
ADTC Scale 3: Tendency towards dishonesty in the process of doing and reporting research	3.88	± 0.65	4.00	± 0.53	0.116
ADTC Scale 4: Tendency towards dishonesty in providing appropriate references and acknowledgements	3.11	± 0.57	2.95	± 0.44	0.011*
PASS Factor 1: Pressures to perform	15.01	± 3.04	15.15	± 2.98	0.677
PASS Factor 2: Perceptions of workload and examinations	10.48	± 2.72	11.39	± 2.69	0.003*
PASS Factor 3: Self-perceptions	13.99	± 2.37	14.75	± 2.26	0.004*
PASS Factor 4: Time restraints	14.66	± 2.84	14.77	± 2.90	0.709

Note. ADS: Academic Dishonesty Scale; ADCS: Academic Dishonesty in the Classroom Setting Scale; ADCPES: Academic Dishonesty in the Clinical/Practice Education Setting Scale; ADTC: Academic Dishonesty Tendency Scale; PASS: Perceived Academic Sources of Stress; UG: undergraduate; GEMs: graduate-entry master's; M: Mean; SD: Standard Deviation.
* Represents statistically significant *p*-values ($p < 0.05$).
Bootstrapping specifications: i) sampling method – simple; ii) # of samples – 1000; iii) CI level – 95%; and iv) CI type - Bias-corrected and accelerated (BCa)

Discussion

The results across the self-report variables in the current study suggest that occupational therapy students have good levels of academic integrity, with lower self-reported rates of dishonest behavior, compared to findings from cohorts of other health science students. The findings on the academic dishonesty scales indicate that the students' views on dishonest behaviors and the frequency they engaged in dishonest behaviors are consistent across the UG and GEMs programs. Significant differences were observed on grade point average and time spent in independent study. While these differences do not appear to influence the overall incidence of dishonest behavior across the sample, it can be concluded that they have a subtle effect on students' tendencies toward certain dishonest practices and students' self-perceptions and attitudes toward workload.

Academic Dishonesty in Classroom and Practice Education Settings

The self-reported instances of academic dishonesty and overall levels of academic integrity of the occupational therapy students in this study compare favorably to their counterparts in nursing and pharmacy. Research has shown that a significant number of nurses do not consider behaviors such as fabricating results in a laboratory exercise or copying information directly from past students' assignments as academically dishonest (Arhin & Jones, 2009). Pharmacy students also have been reported to regard the passing on of assignments to students in lower years as an accepted form of cheating, and in some programs it has become the social norm (Austin et al., 2006). Occupational therapy UG and GEMs students in the present study regarded such behaviors as serious examples of academic dishonesty and reported instances were very low. The similar mean scores recorded by both sets of students across the academic dishonesty scales with no significant difference observed in their mean scores indicates that attitudes toward dishonest practices are consistent across academic year levels of study at the UG and GEMs level.

The recorded low instances of academic dishonesty among the UG and GEMs students may be explained by the high percentage of females across the survey and the self-reported GPAs, which were consistently in the 60% to 79% range. This finding corresponds with research that associates lower rates of academic dishonesty in women and students with higher GPAs (McCabe & Trevino, 1997). The significant difference observed in self-reported GPAs may reflect postgraduate qualification criteria, where high-achieving UG students progress to study at the GEMs level. Increased competition to get into GEMs level professional programs may be competitive, since these programs tend to admit smaller numbers of students compared to UG entry-to-practice professional courses.

Consistent with research investigating academic integrity in health science students, the findings from the academic dishonesty scales highlight the hierarchy of values that exists regarding students' perceptions of different dishonest academic behaviors (Arhin & Jones, 2009; Austin et al., 2006; Montuno et al., 2012). Students demonstrated a tendency to differentiate between active and passive modes of cheating. For example, the UG and GEMs students identified the use of notes and mobile phones in closed-book tests or copying from a student during a test as completely dishonest behaviors. Other behaviors, however, were regarded as less serious breaches of academic integrity; for example, not referencing source material or paraphrasing material from books, journal articles, or websites without reference to the original source.

This behavior was reflected in the frequency ratings indicating that students tended to engage in passive dishonest behaviors rather than blatant forms of cheating. Understanding why students make this differentiation is important in educators' efforts to instill the need for high levels of academic integrity in students. It appears that in the formal setting of an examination, students are less inclined to engage in dishonest behaviors and regard instances of cheating as serious. In contrast,

in informal classroom and home settings, students are more likely to exhibit a casual attitude to quoting material from a published source without due acknowledgement of the source (Montuno et al., 2012).

The perception that practices such as the padding out of bibliographic lists with uncited references are relatively harmless indicates gaps in students' knowledge about what constitutes academic integrity. Students' attitudes may reflect the ease with which sources of information can now be accessed and disseminated, but the danger is that such practices become entrenched and result in students falling short of the standards of academic integrity expected of them. However, it has been shown that the frequent use of the Internet for research purposes can promote behaviors that comply with ethical principles, as students learn to appreciate the importance of accurately searching for relevant information and using that information in a responsible and respectful manner (Oran, Can, Senol, & Hadimli, 2016).

Earlier studies of academic integrity among medical and physiotherapy students has shown that peer pressure was often cited by students as justification for dishonest practices (Henning et al., 2014; Montuno et al., 2012). Other studies have even reported a willingness among students to engage in dishonest practices where instances of cheating escape sanction and the students' rationale is that they can get away with it (Josien & Broderick, 2013). We suggest, however, that the self-reported instances of academic dishonesty in our study reflect the students' lack of awareness that such behaviors contravene the ideals of academic integrity, rather than a willing engagement in dishonest behaviors. For example, the students' failure to appropriately attribute the use of published information and research in assignments may indicate gaps in the students' knowledge about the use of copyright and intellectual property.

The recorded low instances of dishonest behaviors in practice settings are encouraging and suggest that students from both groups have a good understanding of the moral and professional conduct required of them as current students and future occupational therapists. This contrasts with research involving medical and nursing students. One study reported a trend among senior students to regard the reporting of examinations that had not been performed as a less serious example of dishonest behavior than medical students in earlier years (Rennie & Rudland, 2003). In a cohort of nursing students, 38% perceived that reporting falsified patient data was no more a dishonest practice than plagiarizing an academic paper (Balik et al., 2010). Drolet and Désormeaux-Moreau (2016) interviewed 26 French speaking Canadian occupational therapists about their professional values and subjected their narratives to hermeneutic analysis. Sixteen values were identified and three of these (e.g., professionalism, honesty, integrity) have direct relevance to academic integrity. This suggests that the professional education of occupational therapy needs to engender these values in students.

Tendency to Engage in Academic Dishonesty

The finding that the UG and GEMs occupational therapy students reported medium to high ratings across the four ADTS subscales is congruent with research on tendencies to engage in academic dishonesty. For example, Kececi, Bulduk, Oruc, and Çelik's (2011) study of nursing students revealed a high tendency toward academic dishonesty in providing references that mirrors our finding that undergraduates have a greater tendency to use the work of others without citing the appropriate resources and references. This is also consistent with studies of university health science students where almost half declared that they included references in their written assignments in only some instances. Students' web-based study framework was cited as the main reason for their failure to consistently acknowledge original sources in their scholarly endeavors (Oran et al., 2016).

It is important to acknowledge other researchers' suggestions that engaging in dishonest acts, such as using unacknowledged information, does not necessarily mean the student perceives such

behaviors as ethical. Engaging in these activities could be because of a lack of knowledge about academic integrity, particularly in the first and second years of study; a perceived need to keep up with his or her academic studies (Balik et al., 2010); or simply a belief that "everyone else is doing it" (Kececi et al., 2011; Montuno et al., 2012). In the literature, one of the most compelling factors in the decision to plagiarize and use others' findings without due acknowledgement is not to gain an academic edge but is based on the survival instinct, where acts of academic dishonesty are viewed as a necessary evil to ensure students keep up with their studies and not fall behind. This has worrying implications for later practice, where it has been demonstrated that tolerance of such behaviors among students extends into lenient attitudes toward clinical misconduct (Balik et al., 2010).

There is evidence that students want to promote the values of academic integrity in their studies, not simply through the provision of information, but by educators actively supporting and engaging them in assignments and assessment tasks that focus on developing academic integrity (Bretag et al., 2014). Reinforcing desirable self-study habits and confirming the understanding of what are appropriate and inappropriate practices in the educational setting will enable students to better differentiate between honest and dishonest academic behaviors (Montuno et al., 2012). It also establishes high ethical standards for the student body and the ethos that unfairly gaining an advantage over students who adhere to the rules falls short of the ideals of scholarly endeavors as embodied in the concept of academic integrity.

Perception of Stress

The PASS scores suggest that both groups of students experience some stress in relation to the pressure to perform well in their academic studies, with sources of stress ranging from the desire to please lecturers to the external expectations of parents. This is consistent with studies reporting that receiving criticism from supervisors generates significant stress in students (Kumar et al., 2009).

Time constraints were also perceived as a moderate source of stress in terms of time allocated to classes and academic work, having sufficient time to relax after periods of study, and concerns about falling behind with the academic requirements of a course or unit of study. Of note, however, is the significant difference between the UGs and GEMs students in relation to how they perceived the workload, with the GEMs students seemingly less stressed about the requirements of the curriculum. This suggests that the GEMs students surveyed in this research project were more comfortable meeting the demands of the course and less worried about failing their exams. This evidence is supported by the findings on the self-perception scale, where students enrolled in GEMs courses have greater academic self-confidence, including confidence for success as a student, confidence in their future careers, and confidence in making the right academic decisions. Other research has found that students' self-perceptions are often linked to their intelligence and past academic achievements (Bedewy & Gabriel, 2015).

Our findings indicate that the GEMs students' academic experiences, allied with their high GPAs and confidence in engaging in independent study, are factors in experiencing fewer stress points than the UG students. To be eligible for admission to a GEMs occupational therapy course, students also need to have completed an UG degree; therefore, GEMs students are likely to have better honed study skills and the ability to balance the multiple demands of academic study compared to their less experienced UG counterparts. This may be another explanation for why the GEMs occupational therapy students appear to be more at ease with their studies compared to the UG students.

Implications for Education and Practice

The results from the current study establish a baseline of self-report levels of academic integrity among occupational therapy students. This will assist academic and fieldwork educators in

upholding standards of academic integrity by promoting the tenets of honesty, fairness, and respect among students. By providing an understanding of the student perspective, the findings provide an opportunity for academic and fieldwork educators to clarify expectations for students and define and support academic integrity standards. These can be used through educational initiatives in the classroom and fieldwork settings and facilitate students in learning to take responsibility for academic integrity. The integration of targeted course content and measures that actively target areas of academic integrity in which students struggle should minimize and, hopefully, remediate students' dishonest behaviors.

It is notable that the dishonest behaviors engaged in by undergraduates and graduates largely related to forms of cheating involving original source material. One recommendation is for targeted educational initiatives, such as workshops, peer-learning, and role modeling, that offer hands-on opportunities for students to learn how to use and reference others' work appropriately. Hands-on and engaging activities encourage self-study habits that facilitate students' understanding of what is expected of them in terms of academic integrity.

Assessment tasks on a range of honest academic practices that include an oral component requiring the student to present a summary of his or her argument and answer questions may also consolidate and extend students' knowledge and understanding of academic integrity. For example, in learning to differentiate between collaboration and collusion when working with peers on research projects. It is also recommended that librarians are involved in course content with active tutoring throughout UG and postgraduate programs of study that teach students the value of using original work responsibly.

Limitations

A notable limitation of the current study was the convenience sampling approach used to generate the data and asking the participants to complete a self-report questionnaire, which can be prone to biased reporting. For example, the students may not have reported all instances of dishonest practices in which they may have engaged. It also does not account for other factors that may be associated with levels of academic integrity among occupational therapy students, such as students' point of origin, i.e., whether they are a domestic or international student. Another acknowledged limitation was the sample size difference between the UG and GEMs student participant groups (i.e., UG $n = 609$; GEMs $n = 92$). The primary reason for this occurring was that UG enrollment numbers tend to be much larger compared to GEMs class sizes at Australian universities for health professional courses. For example, one of the participating university courses, on average, admits 150 UG students and 35 GEMs students, annually.

Recommendations for Future Research

It is recommended that future research generate qualitative and longitudinal data that explores possible predictive factors relating to students' levels of academic integrity and whether changes in students' levels of academic integrity change as they progress through their programs of study. Studies could be completed where different types of academic integrity awareness or intervention programs completed with students are investigated to determine whether they had a meaningful impact on students' subsequent perceptions of what academic integrity is and their propensity to engage behaviors that are considered forms of academic dishonesty or cheating. Further studies can also assist in establishing the link between academic dishonesty in the classroom setting and dishonest professional behaviors in the professional practice setting, as has been found in other health care disciplines. The academic integrity among students enrolled related to allied health education programs (i.e., physical therapy, speech-language pathology, social work, dietetics, podiatry, chiropractic, rehabilitation counseling) could be compared and contrasted with

occupational therapy UG and GEMs students. Finally, comparisons of occupational therapy UG and GEMs students' academic integrity could be completed between programs in cross-cultural contexts.

Conclusion

The current study used demographic and self-report variables to investigate levels of academic integrity among groups of occupational therapy students. Significant differences were observed between the two groups of students on age, GPA, and time spent in independent study. No significant differences were present on the academic dishonesty scales. The results indicated that UG and graduate students have good self-reported levels of academic integrity in the classroom and practice education settings when compared to research involving students from other health sciences. The statistical differences noted on age, GPA, and time spent in independent study, therefore, had no discernible effect on the students' overall levels of academic integrity. The students scored positively in terms of their moral development, with UGs shown to hold a stronger appreciation of the moral practice and common values inherent in occupational therapy.

The GEMs students were found to experience less stress from workload and examinations and were more confident in their academic abilities than the UGs. Despite recording good levels of academic integrity overall, the UG and GEMs students were found to have medium to high tendencies toward dishonest behaviors, with the UG students inclined to misuse original source material. This indicates that from the student perspective, gaps remain in students' knowledge of how to comply fully with academic integrity requirements. "Cheating within the academic setting has been associated with dishonesty in the clinical setting, which highlights the importance of nurturing a culture of honesty and integrity at university" (Lynch et al., 2017, p. 2846). Therefore, the challenge for academic and fieldwork educators is to ensure course content enables students to practice honesty in all aspects of their studies in both the classroom and practice education settings.

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