Comparing Moral Reasoning across Graduate Occupational and Physical Therapy Students and Practitioners

Brenda S. Howard
University of Indianapolis

Cheyenne Kern
University of Indianapolis

Olivia Milliner
University of Indianapolis

Lindsey Newhart
University of Indianapolis

Sarah K. Burke
University of Indianapolis

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Abstract

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Keywords

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Lindsey Newhart, and Sarah K. Burke

University of Indianapolis

United States

ABSTRACT

Practicing clinicians must use moral reasoning to solve ethical problems and combat moral distress. Development of moral reasoning in occupational therapy (OT) and physical therapy (PT) students has been significantly under researched. The purpose of this study was to analyze the differences in moral reasoning between first year and second year OT and PT students and between students and OT and PT practitioners. Investigators utilized a cross-sectional study design with a convenience sample of University of Indianapolis OT and PT students and a combination of convenience and snowball sampling to recruit licensed OT and PT practitioners. One hundred and fifty-four participants completed the Defining Issues Test - 2 (DIT-2; Rest et al., 1999) survey. Comparisons of N2 scores using *t*-tests found no differences between groups in *moral reasoning schema* (one's preferred way of approaching moral issues, divided into stratified developmental levels). However, Pearson's Chi-Square analysis for a comparison of all students to all practitioners for *moral reasoning patterns* (one's ability to discriminate between types of moral reasoning schemas when presented with a complex moral dilemma) was significant between students (transitional) and practitioners (consolidated), with the greatest difference between second-year students and practitioners. Continual expansion of ethics content, including interjecting clinical experiences into the classroom, within OT and PT graduate programs may promote moral reasoning pattern development with carryover into practice. Clinical experiences provide real-world opportunities necessary to progress students from transitional to consolidated thinking patterns. To improve ethics education, authors recommend active learning strategies and ethics mentorship throughout clinical experiences.

Occupational therapy (OT) and physical therapy (PT) practitioners can experience ethical dilemmas daily (Penny et al., 2016). Ethical dilemmas are situations that involve two or more morally appropriate courses of action that cannot both be followed (Doherty & Purtilo, 2016). An example of an ethical dilemma in practice could include when a practitioner must decide between respecting a client's request for confidentiality and reporting information to protect the client from potential danger. Practitioners experience moral distress in practice when they know the morally appropriate course of action, but meet external barriers, internal resistance, or uncertainty (Doherty & Purtilo, 2016). Moral distress occurrences have included systemic constraints, conflicting values, billing and reimbursement issues, fraud and other questionable behavior, and failure to speak up (Collins, 2018; Kinsella et al., 2008; Slater & Brandt, 2009); conflicts when working with clients and families to optimize autonomy in decision-making (Kassberg & Skar, 2008); and moral distress caused by disagreements between members of the health care team and between team members and their employer (Penny et al., 2016). Penny et al. (2016) have given an example of moral distress as "being expected to continue services even after the client has met all therapy goals to meet productivity standards or being directed to discontinue services because of concerns about third-party payment" (p. 1).

Because the health care environment is fast-paced and ever changing, it is vital that academic programs prepare new professionals to handle the potentially complex ethical dilemmas that occur in clinical practice (Geddes et al., 2009). A practicing therapist must have developed moral reasoning skills, including cognitive problem-solving and emotional coping skills, in order to resolve the moral distress that he or she will inevitably face (Penny et al., 2016). A lack of ethics education can lead to moral distress in practice, which contributes to the unethical treatment of clients, high turnover rates, and overall increased costs of health care (Bell & Breslin, 2008). However, educational programs have helped students develop moral reasoning traits that combat moral distress in practice and improve ethical decision making (Penny et al., 2016). Currently, ethics education is required in accredited OT and PT programs in the United States (Accreditation Council for Occupational Therapy Education [ACOTE], 2018; Commission on Accreditation in Physical Therapy Education [CAPTE], 2019). To bridge the gap between education and practice, increasing a student's level of moral reasoning through intentional ethics education can provide tools to decrease moral distress and behaviors leading to moral dilemmas (Penny & You, 2011).

Certain factors have correlated with moral development progression. Investigators have identified age, grade point average, gender, educational background, culture and religion, and the presence of an ethics course in a program's curriculum as influencers on moral development (Geddes et al., 2009). Age has been an indicator of moral development until late adolescence (Dieruf, 2004). As an individual grows physically, emotionally, and socially, they establish opinions, values, and beliefs (Dieruf, 2004). Older age in years has been identified as an indicator of moral development at the graduate school level in at least one study (Penny & You, 2011). However, educators do not need to simply wait for students to get older. Researchers have suggested that expanding ethics education in OT and PT curricula can influence moral development

and prepare students for ethical problem solving. Dieruf (2004) determined that moral reasoning skills have been a foundational part of educating health care professionals; however, too little time has been dedicated to engaging students in critical thinking and problem solving. Occupational therapy and PT faculty have also reported a connection between students' moral reasoning skills and ethical decision making in clinical practice (Burrus et al., 2007). Kohlberg's Theory of Moral Development proposed that people develop through stages of preconventional (personal interests), conventional (maintaining norms), and post-conventional (universal ethical principles) moral reasoning (Dieruf, 2004; Kohlberg & Hersh, 1977; Rest et al., 1999). Investigators who found evidence of the development of post-conventional reasoning noted the presence of an intentional ethics course (Penny & You, 2011). Edwards et al. (2012) came to a similar conclusion, suggesting that graduate students' exposure to intentional ethics courses as part of OT/PT curricula correlated with an increase in ethical decision making in the professional setting. Shive and Marks (2008) reported that increasing the required course work directly related to ethics education was the most common method used by health professions educators to increase ethical awareness. Dieruf (2004) and Penny and You (2011) highlighted significant gaps in ethics education of students pursuing careers in OT and PT. In order to fulfill the need for ethics education, Penny and You (2011) recommended that students participate in an ethics course directly related to the profession. Koharchik et al. (2017) indicated that actively engaging students in activities like examining case studies, procedures, and policies can also be effective in developing moral reasoning skills.

Addressing moral reasoning in students is especially important to consider, given that health care students who have had difficulty with ethical behaviors have been more likely to experience ethical sanctions as practitioners (Ainsworth & Szauter, 2006; Papadakis et al., 2004; Sisola, 2000). Practitioners are subject to the jurisdiction of testing boards for admittance to the profession; state regulatory boards for licensing; and national associations for standards of practice and ethical behaviors (Yarett Slater, 2016). Sanctions can include private or public reprimands to removal of the ability to practice or revocation of membership in one's professional organization (American Occupational Therapy Association, 2015). Practitioners are also under the jurisdiction of the policies and procedures of one's employer for maintaining ethical behavior (Sames, 2010).

Development of moral reasoning in OT and PT students in the United States has been significantly under-researched. Existing research has compared moral reasoning of OT and PT students (Geddes et al., 2009), OT and PT practitioners (Kulju et al., 2013), and has explored practitioners' experiences of moral distress (Bell & Breslin 2008). Researchers in Canada reviewed curricula to identify when graduate level OT and PT students received ethical content (Hudon et al., 2014). However, investigators found no studies that examined the relationship between specific ethics content and moral development in OT and PT programs in the United States. With OT and PT academic programs in the United States occurring at a graduate level and within a unique health

care system, more investigation is needed regarding ethics education within academic curriculums and moral development in these programs (Gupta & Bilics, 2014). Refer to Appendix for definitions of moral distress, moral reasoning, and related terms.

The purpose of this study was to analyze the differences in moral reasoning between first-year and second-year OT and PT students and between students and OT and PT practitioners. Secondary research purposes included: examining differences in moral reasoning between OT students and PT students at the University of Indianapolis, Indianapolis, IN, and examining differences between years one and two for OT and PT students at the University of Indianapolis. Because ethical development has been previously studied in OT and PT students, but not in the United States (Geddes et al., 2008), and because Values and Ethics is an interprofessional core competency (Interprofessional Education Collaborative [IPEC], 2016), investigators determined to study both OT and PT students and practitioners. By understanding moral reasoning development, health care educators can consider how to better foster growth in ethical problem solving (Burrus et al., 2007; Penny & You, 2011).

Methods

Investigators implemented a cross-sectional research design utilizing a sample of convenience from the students in the University of Indianapolis OT and PT programs; and OT and PT practitioners through a direct email to University of Indianapolis alumni selected at random from a combined list of OT and PT graduates, and snowball sampling through alumni social media pages.

Ethics

This study was approved by the University of Indianapolis Human Research Protections Program as Exempt (UIndy Study #0894).

Recruitment

Investigators recruited individuals from the first- and second-year OT cohorts at the University of Indianapolis in the fall of 2018. There were 125 students within two entry-level Doctor of Occupational Therapy (OTD) cohorts and two Masters of Occupational Therapy (MOT) cohorts at the time of recruitment. The first-year OTD cohort was comprised of 44 students (42 females, 2 males) and the second-year OTD cohort had 44 students (43 females, 1 male). The first-year MOT cohort was comprised of 18 students (15 females, 3 males) and the second-year cohort had 19 students (17 females, 2 males). The OTD and MOT programs were mostly comprised of White females. Males made up 6.5% of the four OT cohorts included in recruitment, and less than 10% (12 students) identified as a race/ethnicity other than White. The mean ages of the MOT cohort first- and second-year students were 29.6 and 28 years, respectively. The mean ages of the OTD first and second year cohorts were 23.3 and 24.6 years old, respectively.

Investigators also recruited individuals from first- and second-year PT cohorts at the University of Indianapolis. The first-year doctor of physical therapy (DPT) program was composed of 49 students (32 females, 17 males). The second-year DPT cohort was

comprised of 47 students (29 females, 18 males). The DPT program was comprised mostly of White females. Males made up 36.5% of the two cohorts included in recruitment, and 4% (4 students) identified as a race/ethnicity other than White. The mean age of the first-year cohort was 23 years old, and the second-year cohort mean age was 24 years old.

Individuals from the first- and second-year cohorts of the OT and PT programs were recruited for this study via email and social media. Emails were sent to the students of the targeted cohorts, and social media promotions were posted on the University of Indianapolis OT and PT program Facebook pages while the survey was live. Investigators also recruited practicing OTs and PTs. Emails were sent to 400 alumni (200 OT practitioners, 200 PT practitioners) who were randomly selected from a list of OT and PT alumni of University of Indianapolis' programs. Via the email, the randomly selected alumni were encouraged to forward the email to colleagues to facilitate more participants. Social media promotions were also posted on the University of Indianapolis OT and PT alumni Facebook pages while the survey was live.

The inclusion criteria for OT and PT students included enrollment at the University of Indianapolis in the first or second year of their respective programs. Participants from the remaining academic programs offered at the University of Indianapolis were excluded. Third year PT and OT students were excluded from this study due to their participation in clinical education rotations during the completion of the study.

To participate in this study, practitioners self-identified as licensed OT and PT practitioners. Occupational therapy assistants (OTAs) and physical therapy assistants (PTAs) were excluded from this study because recruitment efforts did not include OTA or PTA students, as there was not an OTA program at the university.

Intervention
The College of Health Sciences at the University of Indianapolis encompasses both the School of Occupational Therapy and Krannert School of Physical Therapy. The University of Indianapolis offers two entry-level OT education tracks. One program is on track to receive a MOT while the other is on track to receive an OTD. Students in both programs receive an identical ethics curriculum and are held to similar national accreditation standards (ACOTE, 2018). Education related to ethics is integrated into a five-course series. Each course in the series incorporates ethics in a slightly different way to expand student knowledge and experience on the topic. Course 1 introduces the OT Code of Ethics, Course 2 introduces students to ethical problem solving, Course 3 prepares students for documenting in practice, Course 4 provides review of the Code of Ethics with clinical emphasis, and finally, Course 5 educates students about business and professionalism related to ethics. These courses are interspersed throughout Level I and Level II fieldwork and include both formal and informal debriefing regarding ethical issues observed during clinical rotations.

University of Indianapolis' Krannert School of Physical Therapy offers a DPT degree. The education related to ethics for DPT is incorporated through one course that is taken during the second semester of the first year, prior to any clinical education. The course content includes lectures about the code of ethics for physical therapy, ethical dilemmas within the field, and uses the Realm-Individual Process-Situation (RIPS) Model of Ethical Decision Making to facilitate navigation of ethical dilemmas (Swisher et al., 2005). The code of ethics for PT is similar to that of the code of ethics for OT in that it focuses on the rights and care of recipients of services. However, the PT code of ethics focuses more on the business aspect of health care (Verma et al., 2006).

Instrument
The Defining Issues Test - 2 (DIT-2), developed by Rest and colleagues (1999), is the most-used tool to measure Kohlberg's Moral Development Theory (Dieruf, 2004; Kohlberg & Hersh, 1977; Rest et al., 1999). The DIT-2 requires the decision maker to answer a series of multiple-choice questions by rating and ranking a series of responses to several stories that cover a variety of ethical dilemmas and social issues (Rest et al., 1999). This ranking is depicted by N2 scores, which represents the *moral reasoning schema* (one's preferred way of approaching moral issues, divided into stratified developmental levels) discerned through the survey scenarios. The DIT-2 further examines *moral reasoning patterns*, or one's ability to discriminate between types of moral reasoning schemas when presented with a complex moral dilemma. These patterns include consolidated (confident, mature) and transitional (varied, uncertain). The DIT-2 also collects demographic information including age, sex (male or female), race/ethnicity, and level of education. The individual completes moral reasoning based on a moral schema of personal interest, maintaining norms, or post-conventional reasoning (Rest, 1994). Post-conventional reasoning is the most advanced; an individual using this moral reasoning schema looks beyond the immediate rewards of personal interest and the absolutist application of conventional rights and wrongs to consider the complexities of ethical dilemmas (Edwards et al., 2012). Dieruf (2004) stated that the higher the individual can process complex information, the more likely the individual is able to understand and make decisions ethically in the midst of the ethical dilemma. Having greater ability to make ethical decisions makes post-conventional reasoning the ideal level for OT and PT students and professionals. Using the Defining Issues Test (DIT) and the second edition, DIT-2, researchers have been able to analyze how moral reasoning changes during various educational programs (Rest et al., 1999). The DIT-2 has demonstrated improved validity due to improved data scoring from the original DIT (Rest et al., 1999).

Procedures
Investigators began recruitment in August 2018. Participants were asked to complete the DIT-2 online survey between September 4 to October 9, 2018 by clicking on the Qualtrics® (https://www.qualtrics.com/) link included in emails or on Facebook pages. Investigators then sent raw data derived from the DIT-2 to the Center for Ethical Study Development at the University of Alabama for scoring, as per their protocol for use of the DIT-2. Next, investigators analyzed the scored data using Qualtrics® and SPSS version 25 (IBM Corp., 2017) to compare groups.

Sample Size, Power, and Precision
The total sample size required to achieve statistical significance with ANOVA analysis was 134 participants with medium effect size (0.30), alpha error at $p < 0.05$, and power set to 0.95 (Faul et al., 2007). For between groups comparison, a sample size of 26 was needed with the effect size at large (0.50), alpha error set at $p < 0.05$, and power set at 0.80.

Measures and Covariates
Data were analyzed to identify between-groups comparisons of means using ANOVA and independent samples t-test. Pearson's Chi-Square was employed for between-groups comparison of nominal data. Investigators compared means of N2 scores of moral reasoning for all six groups using one-way ANOVA. Then investigators compared first year OT and PT students to second year OT and PT students. Investigators also compared OT students and practitioners as a group to PT students and practitioners as a group. Finally, investigators compared all of the OT student participants in the study to all of the practicing OTs in the study, and all of the PT student participants in the study to all of the practicing PTs in the study; along with all students vs. all practitioners. These between-groups comparisons were completed with independent samples two-tailed t-tests. Covariates included examination of the impact of age, gender, and educational level on moral reasoning using an ANOVA test.

Results
This was a cross sectional design using the DIT-2 to compare differences in moral reasoning between first year and second year OT and PT students and between students and OT and PT practitioners. This study utilized a sample of convenience with University of Indianapolis OT and PT students, and OT and PT practitioners recruited from alumni and snowball sampling.

Participants
Two hundred thirty-one surveys were received. Seventy-two surveys were discarded due to incompletion, resulting in 159 participant questionnaires for analysis. Five additional respondents were eliminated due to incomplete data. This culling resulted in 154 complete questionnaires for final analysis.

Of the 154 respondents who completed the survey meeting all inclusion criteria, 18 participants identified as male and 136 participants identified as female. For a full description of participant demographic information, refer to Table 1.

Table 1

Participant Characteristics (n=154)

Characteristics	OT Y1 n(%)	OT Y2 n(%)	PT Y1 n(%)	PT Y2 n(%)	OT n(%)	PT n(%)	Total n(%)
Total	25(16)	32(21)	10(6)	24(16)	46(30)	17(11)	154(100)
Gender							
Male	1(6)	1(6)	1(6)	10(55)	1(6)	4(21)	18(12)
Female	24	31	9	14	45	13	136(88)
Age							
21-30	24	30	10	24	24	6	118
31-40	1	1	0	0	15	2	19
41-50	0	1	0	0	5	6	12
51-60	0	0	0	0	2	3	5
Race/Ethnicity*							
African American or Black	2	1	1	0	0	0	3
Asian or Pacific Islander	1	0	1	1	1	0	4
Caucasian (White; other than Hispanic)	22	29	9	23	45	17	145
Hispanic	1	0	0	0	0	0	1
Hispanic/ Caucasian	1	0	0	0	0	0	1
Other**	0	2	0	0	0	0	2

*Participants were instructed to "check all that apply."
**Other: Participants wrote in "Multiracial" and "Wish not to specify."
OT Y1 = Occupational therapy first-year students
OT Y2 = Occupational therapy second-year students
PT Y1 = Physical therapy first-year students
PT Y2 = Physical therapy second-year students
OT = Licensed Occupational Therapists
PT = Licensed Physical Therapists

Data Analysis

Investigators completed checks of data integrity, including frequencies and distributions. The full dataset and data groupings were normally distributed as checked with Shapiro-Wilk.

To compare between each student cohort and practitioner groups, a one-way ANOVA was conducted. A comparison of all six groups' N2 scores using a one-way ANOVA did not achieve significance ($p > .05$).

N2 scores of all practitioners and all students were normally distributed. A two-tailed *t*-test comparing means of N2 scores between all students and all practitioners was not significant ($p < .05$).

A grouped comparison of all OT students and OT practitioners versus all PT students and PT practitioners was normally distributed using Shapiro-Wilk and Kolmogorov-Smirnov tests. A two-tailed *t*-test comparing N2 scores between groups was not significant ($p < .05$).

A grouped comparison of all first years, all second years, and all practitioners was normally distributed using Shapiro-Wilk and Kolmogorov-Smirnov tests. A 2-tailed *t*-test indicated no significant differences in N2 score means between first- and second-year students ($p < .05$ with equal variances not assumed). A 2-tailed *t*-test comparing all first-year students to practitioners and all second-year students to practitioners also yielded no significance ($p < .05$ respectively, with equal variance not assumed).

The "consolidation" and "transition" classifications of moral reasoning differentiate problem solving thought processes from a consistently synthesized and confident pattern of thinking (consolidated) to a varied pattern of thinking (transitional; Bebeau & Thoma, 2003). A Pearson's Chi-Square analysis comparing the Consolidation/Transition variable of all six groups did not reach significance (X^2 [5, n=154] =10.445, p= .064). However, a comparison of all students versus all practitioners for Consolidation/Transition was significant (X^2 [1, n=154] = 8.668, p = .003). A closer examination of all first-year students, all second-year students, and all practitioners also indicated significant results (X^2 [2, n=154] = 8.686, p = .013; see Table 2).

Table 2

Moral Reasoning Patterns, Consolidation vs. Transition: All First Year Students and all Second Year Students v. All Practitioners

Group	Transition n (%)	Consolidation n (%)	Total
All First Year Students	22 (62.9%)	13 (37.1%)	35 (100%)
All Second Year Students	36 (64.3%)	20 (35.7%)	56 (100%)
All Practitioners	25 (39.7%)	38 (60.3%)	63 (100%)

Pearson's Chi-Square: X^2 (2, n=154) = 8.686, p = .013

A post hoc Bonferroni correction (p=.0167) indicated the significant difference was between second-year students and all practitioners (X^2 [1, n=119] = 7.183, p = .007). See Table 3 for results.

Table 3

Moral Reasoning Patterns, Consolidation vs. Transition: Group Comparison Using Post-hoc Bonferroni Correction

Group	Pearson Chi-Square Value (degrees of freedom)	Asystematic 2-sided significance*
First Year Students v. Second Year Students	.019 (1)	.890
First Year Students v. Practitioners	4.842 (1)	.028
Second Year Students v. Practitioners	7.183 (1)	*.007*

*Post-hoc Bonferroni correction of Second Year Students v. Practitioners: X^2 (1, n=119) = 7.183, p = .007. Italics indicate significant finding.

Discussion

This study aimed to analyze moral reasoning in first year and second year OT and PT students and between OT and PT students and OT and PT practitioners. Although no differences were found between these groups regarding *moral reasoning schema*, there were significant differences between students and practitioners regarding use of a consolidated or transitional *pattern* of moral reasoning. Additionally, secondary purposes of examining differences between OT and PT students and between first-year and second-year students yielded no differences between groups.

Patterns of moral reasoning have been defined by the ability or inability of an individual to discriminate between types of moral reasoning schemas when presented with a complex moral dilemma (Bebeau & Thoma, 2003). Moral reasoning has been organized into different types of moral schemas consisting of personal interest, maintaining norms, and postconventional (Bebeau & Thoma, 2003). Transitional thinking patterns have

suggested the inability to discriminate between moral schema typed items, resulting in developmental disequilibrium and no evidence of schema preference (Bebeau & Thoma, 2003). Contrarily, consolidated thinking patterns indicate the ability to discriminate among moral schema typed items, resulting in a clear demonstration of preference for a specific type of moral reasoning (Bebeau & Thoma, 2003). For example, a practitioner using a postconventional moral reasoning schema with a consolidated reasoning pattern might confront the ethical problem of a client disclosing substance abuse that conflicts with medical treatment differently than a student with a preference for postconventional reasoning but a transitional pattern. The practitioner might opt for confidentiality in order to continue to support the client. The student, however, might employ a "maintaining norms" strategy in this instance by reporting the substance abuse. In upholding the law, the student may alienate the client. When confronting an ethical problem using a consolidated pattern of moral reasoning, a practitioner would be able to consistently identify that the "correct" course of action may not always be the "best" course of action. The practitioner, operating from a consolidated moral reasoning pattern, will be able to consistently adhere to a mature postconventional moral reasoning schema; while the student, having a transitional moral reasoning pattern, might revert to a less mature moral reasoning schema. While the scoring of the DIT-2 does not allow for qualitative examples of these reasoning shifts, the scoring of these shifts is based on responses to ethical scenarios in which the individual must make a choice about how to approach several moral problems.

Investigators hypothesized that as students received more education and more experience throughout their doctoral program, moral reasoning would significantly improve between first- and second-year students. The highest level of moral reasoning schema was expected in current practitioners. However, data indicated that OT and PT students showed no significant difference in moral reasoning schema when comparing first years to second years and when comparing students to OT and PT practitioners, as measured by N2 scores. The lack of difference between each year and between students and practitioners suggests that a person's preferred method of moral problem solving does not significantly change from the time one is an entry-level OT or PT student to the time one is a practitioner. The *pattern* of moral reasoning, in other words, how confidently and consistently the individual was able to respond to a moral problem, varied between students and their practitioner counterparts. Students showed a greater percentage of transitional (variable) moral reasoning patterns, whereas practitioners demonstrated a greater percentage of consolidated (confident and stable) patterns of thinking. Results revealed a change in pattern occurring between second year students and practitioners from transitional to consolidated moral reasoning. Investigators speculated whether transitional patterns of moral reasoning contributed to moral distress, but no literature was found confirming this speculation. Investigators wondered if clinical experiences provided the bridge from transitional to consolidated patterns. Practicing moral decision making may have helped practitioners become more confident and consistent in their moral decision making. Investigators considered why this difference manifested between the second-year students and practitioners rather than between first-year practitioners and students. One possible reason may include greater indecision when first experiencing clinical practice as part of one's growth in moral

reasoning ability (year 2), which may improve when one has practiced clinically. There may also have been a type II error (false insignificance) due to small sample size in analyzing the difference between first year students and practitioners.

Because Penny and You (2011) hypothesized that increased age leads to higher levels of moral reasoning, results indicating no significant difference in moral schema levels between students and practitioners may reflect the lack of a significant age gap between students and practitioners within this study. Even though these groups possess differences in clinical practice experience, the moral schema between groups was not significantly different. Other than age playing a role in moral reasoning, no other studies have examined the comparison of moral schemas from OT and PT students to practitioners. More research is needed to investigate if age is the main factor in moral schema development, or if factors such as exposure to clinical experience play a bigger role in OT and PT development. Further, more research is needed to investigate the importance of moral reasoning patterns and whether consolidated patterns of moral reasoning improve the practitioner's ability to avoid moral distress (Bell & Breslin, 2008; Penny et al., 2016).

Although investigators of previous studies did not compare moral schemas and patterns of OT and PT students to practitioners, studies exist analyzing differences among OT and PT students' moral schemas prior to and after completion of educational programs. Penny and You (2011) utilized the DIT-2 tool to determine change in students' moral reasoning between first and third years of OT school at a United States university and discovered no significant difference in post-conventional thinking between students. Additionally, Dieruf (2004) showed no difference of DIT scores in OT and PT students before and after a two-year bachelor's degree educational program at a United States university. Both Penny and You's (2011) and Dieruf's (2004) results were consistent with this present study's results that indicated no difference in moral reasoning schema between first year and second year OT and PT students.

In contrast, Geddes et al. (2009) concluded through a sample of 288 OT and PT students that moral judgment significantly improved after completion of respective two-year bachelor's degree programs at a Canadian university. Inconsistency in results with the present study could be linked to the emphasis on the development of ethical content contained within the OT and PT programs analyzed. Geddes et al. (2009) analyzed moral development in undergraduate OT and PT programs that "had undergone substantial development" (p. 99) of ethics content within the curriculum. However, Dieruf (2004) analyzed OT and PT programs that did not include Schlaefli et al.'s (1985) recommendation of 3 to 12 weeks of ethical instruction. Contrasting these two studies suggests that a correlation might exist between increased moral judgment scores among OT and PT students and a well-developed ethics curriculum. As the landscape of OT and PT educational programs has changed from bachelor level programs to post-graduate degree programs, development of ethical content requires expansion as well.

Although moral schema differences were not found between students and practitioners within this study, a significant difference was discovered between students and practitioners in regard to transitional and consolidated patterns of moral reasoning, respectively. These patterns were indicative of how strongly synthesized and confident patterns of moral thinking were in each group. Since this study indicated a significantly greater number of OT and PT students employed a transitional pattern of thinking, a need for real-life clinical experience may be necessary to obtain the mature consolidated thinking pattern that OT and PT practitioners were found to possess. Furthermore, the mature (consolidated) pattern of moral thinking among OT and PT practitioners suggests a larger role for clinical experience in moral reasoning development, as opposed to other factors such as age and previous education level.

Implications for Occupational Therapy Education
First-year OT and PT students demonstrated no significant difference in moral reasoning schema when compared to second year students, who have received an extra year's worth of ethics education. This finding suggested that educational experiences alone did not prompt significant change in moral reasoning schema nor patterns in this sample. However, the literature has indicated that educational programs have continued to play a significant role in moral reasoning development. Both Dieruf (2004) and Geddes et al. (2009) emphasized the importance of expanding ethical content within curricular programs to increase moral reasoning. The importance of ethics in education is to promote ethics in practice and prevent unethical practice in the field (Bell & Breslin, 2008). To prevent unethical practice in clinical fields, OT and PT programs may need to expand intentional ethical content. This could include specified ethics courses, interprofessional ethics education, and interactive case studies with ethical review. Educational strategies could address contemporary ethics issues, but more importantly, should focus on teaching students *how* to work through ethical problems individually and as a member of the health care team using an ethical problem solving framework (Doherty & Purtilo, 2016). In this manner, students are prepared, not with the "correct" answer for each ethical problem, but with a method and a mindset for consistently working through both present and future ethical issues.

Results indicated a change from transitional patterns of thinking in OT and PT students to consolidated patterns in OT and PT practitioners. These findings suggest the need for clinical experience to develop mature patterns of thinking. Participants of the current study varied in regard to time in the graduate programs and clinical exposure. Because the significant change from transitional to consolidated thinking patterns occurred between second year students and practitioners, results suggested that clinical exposure played more of a role in moral reasoning pattern development than students' time in the program. Students often work on case studies during class; however, they lack the implementation of interventions on real life clients. When students experience exposure to repercussions of interventions on actual clients, students gain the opportunity to consolidate thinking into concrete realities. Occupational therapy and PT programs currently utilize clinical education as a method to provide this exposure; however, most longer-term clinical experiences are completed near the end of the program when ethical education has already ceased. Incorporating clinical experiences

into the educational component of OT and PT programs through competencies and client panels allows for real life moral reasoning exposure; thus, potentially helping to consolidate student moral reasoning. Additionally, providing ethics rounding and mentorship (Erler, 2017) may promote development of moral reasoning patterns in a supportive environment as students enter the clinical setting.

Future Research
Implications for future research include the need for a larger sample size with multi-site participation, in order to more adequately power the results and gain greater participant diversity. Further, perspectives of interprofessional collaboration can increase moral reasoning patterns for both OT and PT practitioners (IPEC, 2016) and could be explored with future research. A longitudinal study across multiple classes and programs may find further connections between ethics content, moral reasoning development, and ethical practice. This investigation could be completed in conjunction with neighboring universities across a network of practitioners through consistency of ethics content and delivery. Investigators also recommend qualitative research with phenomenological and narrative designs to gather clinician perspectives on the ethical dilemmas they face in practice, the influence of context and culture on management of ethical challenges, and student professional socialization (Murray et al., 2015). Surveying new graduates regarding helpful coursework as well as application in the field may inform curricular topics. A comprehensive review of ethics content (Hudon et al., 2014) in US curricula may identify strengths and weaknesses across preparation of students entering the field.

Limitations
Responses were collected from a largely homogenous sample with mostly White women. Demographic question options for sex were limited to "male" and "female", with no additional option for "other." Although practitioner locations likely varied, all were recruited from a list of alumni and social media pages from one university in the midwestern United States. Although methodology allowed for snowball sampling, the number of practitioners external to the university was likely small, and investigators did not collect information regarding which participants were external to the university alumni. Student responses were likewise restricted to the same university. Investigators did not collect number of years in practice nor current practice locations from practitioners. Small group sizes of PT practitioner and first year PT student participants limited diversity of the sample further. Investigators were unable to include OTA and PTA students and practitioners due to lack of availability of a convenience sample. In addition, responses of participants may have been affected by a technical error that had the survey closed for 5 days during its open period. This was corrected by re-posting the recruitment link with an announcement that the survey was open again. Lastly, the small sample size may have resulted in type II error with false insignificant findings.

Conclusion
The purpose of this study was to analyze the differences in moral reasoning between first year and second year OT and PT students and between students and OT and PT practitioners. Through comparisons of first year and second year students and

practitioners, investigators discovered no significant difference in moral reasoning schemas. However, in comparing patterns of moral reasoning, investigators found significant differences; specifically, students utilized transitional patterns of moral reasoning and practitioners implemented consolidated patterns of moral reasoning. Although generalizability of this study is limited, results suggest that infusing the educational curriculum with clinical applications with a variety of pedagogical methods may be useful in facilitating development of moral reasoning. Similarly, providing support for moral reasoning through mentorship in clinical education may also facilitate consolidation of moral reasoning patterns. As understanding of how to facilitate moral reasoning improves, educational programs can better prepare OT and PT students to make moral decisions in clinical practice. Further research is indicated to better prepare and support practitioners in their moral and ethical development.

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Appendix

Glossary

- **Consolidated** - An established and consistent frame of thinking under which an individual morally reasons through a situation (Bebeau & Thoma, 2003).

- **Ethical decision making** - Identifying a problem, analyzing it, and finding resolution. that produces a caring response to an ethical issue (Doherty & Purtilo, 2016). See also ethical problem solving.

- **Ethical dilemma** - "A common type of situation that involves two (or more) morally correct courses of action that cannot both be followed" (Doherty & Purtilo, 2016, p. 66).

- **Ethical problem** – An issue in which ethical principles are at risk and one must decide regarding priorities for action. May also be referred to as an ethical question. "Places focus on one's role as a moral agent and those aspects of the situation that involve moral values, duties, and quality-of-life concerns in an effort to arrive at a caring response" (Doherty & Purtilo, 2016, p. 56).

- **Ethical problem solving –** Making decisions for action based on the agreed-upon principles and standards of one's profession. Doherty & Purtilo (2016) outline a six-step process including (1) gathering relevant information, (2) identifying type of ethical problem, (3) utilizing ethical theories to analyze the problem, (4) consider practical alternatives, (5) carry out resolution, and (6) evaluate and reflect.

- **Ethical reasoning** - "A mode of reasoning used to recognize, analyze, and clarify ethical problems that arise. Helps clinicians make decisions regarding the right thing to do in particular case" (Doherty & Purtilo, 2016, p. 77) and provides "the moral basis for professional behaviors and actions. The focus is not on what could be done for the patient, rather on what should be done" (Doherty & Purtilo, 2016, p. 77).

- **Moral decision making -** Making decisions based on one's own values, sense of duty, and character. See also ethical problem solving and ethical reasoning (Doherty & Purtilo, 2016).

- **Moral distress** - "Occurs when the moral agent knows what the morally appropriate course of action is but meets external barriers, internal resistance, or high level of uncertainty" (Doherty & Purtilo, 2016, p. 66).

- **Moral reasoning -** Making moral judgments in context-dependent situations. Moral reasoning and morality require consideration of personal values, duty, and character. Moral reasoning is needed to address ethical decision making in light of professional codes of ethics (Doherty & Purtilo, 2016).

- **Moral schema**- An approach to problem solving when faced with moral decision making. There are 3 levels of moral reasoning: preconventional morality, conventional morality, and post-conventional morality (Geddes et al., 2009)

- **Moral judgment** - A type of decision making required "when the particulars of a specific situation arise" (Doherty & Purtilo, 2016, p. 8).

- **Morality** - "Guidelines designed to preserve the very fabric of their society" (Doherty & Purtilo, 2016, p. 7) and is relational and context-dependent (Doherty & Purtilo, 2016).

- **Patterns of moral reasoning** - Frame of thinking when processing moral dilemmas. Can be consolidated or transitional (see definitions of transitional and/or consolidation; Bebeau & Thoma, 2003).

- **Transitional** - A failure to consistently process and problem solve moral decisions under one moral schema. This is a marker of developmental disequilibrium (Bebeau & Thoma, 2003).