Occupational Therapy Practice Errors in Physical Rehabilitation and Geriatrics Settings: A National Survey Study

Keli Mu, Helene Lohman, Linda Scheirton

OBJECTIVES. The purpose of this survey study was to investigate occupational therapy practice errors in physical rehabilitation and geriatric practice settings.

METHOD. Two hundred and forty-five (245) out of 994 surveyed occupational therapists who have practiced or currently practice in physical rehabilitation or geriatrics settings responded to a self-developed questionnaire. Descriptive statistical analysis was used to describe practice errors as to the types, causes, impact on, and responses of occupational therapists and work sites. Inferential statistical analysis was used to explore the relationships among different variables of interest including: the effect of the number of years of practice experience on the perceived impact of making errors on practice; the relationship between disclosure or nondisclosure of errors; and the types of coping strategies used by occupational therapists and work site administrators’ responses to errors.

RESULTS. The vast majority of practice errors occurred during the intervention phase of the occupational therapy process. Misjudgment, lack of preparation, and lack of experience were reported as the top three causes of practice errors. Various coping strategies—such as compensating for the errors by voluntarily devoting additional time for care of the patient, making and following a corrective plan, concentrating on the next step, or not letting errors interfere with daily work—were used by the occupational therapists when errors occurred. The types of coping strategies and work site responses appeared to be associated with the disclosure or nondisclosure of errors.

CONCLUSION. Errors occur in occupational therapy practice. Making errors has considerable impact on occupational therapists as well as their future practice. However, disclosure of errors can often lead to positive outcomes.


Error prevention and reduction continue to challenge health care professionals. A substantial body of evidence points to health care errors as a leading cause of death and injury in the United States (Institute of Medicine, 1999; Kelly, 1995; Leape et al., 1995; Meurier, 2000; Meurier, Vincent, & Parmar, 1997; Wu, 1999; Wu, Folkman, McPhee, & Lo, 1991). The cost in human tragedy and suffering by patients and health care practitioners highlights the urgent need for considerable error reduction in health care delivery. Whereas research literature on practice errors in medicine, nursing, and pharmacy is substantial (e.g., Bates et al., 1995; Kelly, 1995; Leape, 1994; Leape et al., 1995; Lesar, Briceland, & Stein, 1997; Levinson, Roter, Mullolly, Dull, & Frankel, 1997; Meurier et al., 1997; Wu, Cavanaugh, McPhee, Lo, & Micco, 1997; Wu et al., 1991), studies in other health care professions such as physical therapy and occupational therapy are relatively scarce. In occupational therapy, although anecdotal reports, malpractice documentation, and regulatory board records have revealed the fact that practice errors do occur (American Occupational Therapy Association [AOTA], 2001; National Board for Certification in Occupational Therapy, 2000; Ranke & Moriarty, 1997), it is not until recently that researchers have begun to study the phenomenon of practice error (Scheirton, Mu, & Lohman, 2003). In the first phase of a 2-year
research project, Scheirton, Mu, and Lohman conducted focus groups in four different states and examined the perspectives of occupational therapists on practice errors in physical rehabilitation and geriatrics settings (Lohman, Mu, & Scheirton, 2003; Scheirton et al., 2003). Findings of the focus group studies suggest that occupational therapists perceive practice errors from a broad perspective that includes both technical and moral errors. Although making errors had tremendous effects on patients and occupational therapists, participants of the focus groups valued the learning experience when errors occurred and incorporated constructive changes in their practice afterward.

The study reported here was the result of the second phase of the research project, a national survey study conducted between 2001 and 2002. The overall goal of the study was to gain a broader understanding of the phenomenon of practitioner errors in physical rehabilitation and geriatric occupational therapy practice. Specifically, this study examined: the perceived root causes of errors; the impact of errors on patients, occupational therapists, and future practice; and the responses of work site administrators to errors. It also explored the relationships among different variables of interest in the study—such as the possible effect of the number of years of practice experience on the perceived impact of making errors in future practice, and the possible relationships between disclosure or nondisclosure of errors and the types of coping strategies used by therapists and work site administrators’ responses to errors.

Method

Participants

A sample of 1,000 occupational therapists practicing in either physical rehabilitation, geriatrics, or in both settings was randomly selected from the AOTA membership lists. To recruit the participants, the investigators contacted AOTA and obtained demographic information on primary work settings of occupational therapists in the United States. Among the 15 work settings identified by AOTA, the investigators of the study selected 6 as being physical rehabilitation or geriatrics. The 6 work settings were: rehabilitation hospital or center; hospital (non–mental health); sub-acute facility or unit; skilled nursing or long-term-care; freestanding; and home health. The number of occupational therapists practicing in each of the 6 settings varied, and there were a total of 6,924 occupational therapists practicing in these settings at the time of the study. According to the Dillman’s sample size estimation table (Dillman, 2000), for a population of 6,924, a sample of 920 occupational therapists was needed at a 95% confident level with a ±3% sampling error and a 50/50 split. A 50/50 split is the most conservative value of the expected variation in answers to the question of interest, i.e., “the expectation that 50% of people in the population answer ‘yes’ to a question and 50% answer ‘no’” (Dillman, 2000, p. 207). In the current study, a sample of 1,000 occupational therapists out of 6,924 from the 6 settings was selected and invited to participate. This sample size was determined because of the sample size estimation table and the pragmatic considerations of the investigators (i.e., time, effort, and monetary limitation). A modified follow-up procedure suggested by Dillman (2000) was implemented in the study to increase the response rate. A description of the follow-up strategies that were used was detailed in the method section of the study. A proportional stratified sample by the population size in each of the 6 settings was used to obtain this sample. This sample was obtained through the following: first, the total number of occupational therapists in each setting was obtained; next, a systematic sampling was run to select every sixth therapist in each setting; last, the required sample size in each setting was generated through running a computerized random sample after the systematic sampling was completed.

Survey Questionnaire

Questionnaire development. A survey questionnaire, entitled Occupational Therapists’ Response to Practitioner Error in Physical Rehabilitation and Geriatrics, was used to examine occupational therapists’ perceptions on practice errors. The survey questionnaire used in this study was originally designed for use in medicine (Wu et al., 1991) and was later modified for use in the nursing field (Meurier et al., 1997). Several steps were taken to modify this instrument for use with occupational therapists. First, the findings of the focus group studies during the first phase of the project (Scheirton et al., 2003) were used. Second, this revised questionnaire was presented to several local occupational therapists in physical rehabilitation and geriatrics to seek their input on the clarity of the questionnaire, such as the wording of the questions, grammar usage, and ease of understanding. Comments from these occupational therapists were incorporated to revise the initial draft of the questionnaire, and a revised survey was generated. Third, this revised survey questionnaire was field-tested with a group of 34 occupational therapists at a state conference in the Midwest. These occupational therapists were invited to complete the questionnaire, provide comments, and record the time taken for completion. Comments from the respondents were examined by the investigators and were incorporated into the revision of the questionnaire. In addition, responses to the questionnaire were analyzed statistically, including factor and item analysis, using the
software program Statistical Package for the Social Sciences (SPSS), version 12.0. The findings of the field testing and statistical analysis resulted in the deletion of two questions and the wording of several others and subsequently generated the third draft of the questionnaire. This third draft of the questionnaire was again field-tested with five additional local occupational therapists. The final version of the questionnaire was developed as a result of the last field testing.

The final version of the questionnaire consisted of six sections concerned with description of an error, causes of the error, impact of the error, coping with the error, work site response to the error, and demographic information. Some sections had subsections. The section on impact of the error consisted of three subsections: impact on patients, impact on yourself, and impact on your practice. Both open-ended and close-ended questions were included in the questionnaire. In the close-ended question sections, a Likert scale (4-point Likert scale) format was used. At the beginning of the questionnaire, the definition of error in the study was provided. Practice error was defined as an act or an omission (a) for which the occupational therapist felt responsible, (b) that had serious or potentially serious physical or psychological consequences for the patient, and (c) that would have been judged wrong by knowledgeable peers at the time the error occurred. The respondents were then asked to describe a practice error that they had made and then answer the remaining questions based on the error reported.

Implementation procedures. The survey implementation procedures suggested by Dillman (2000) were used in the study in an effort to attain a high response rate. The recommended procedures contained a total of five contacts including a pre-notice letter, questionnaire mail-out, postcard thank you or reminder, the replacement questionnaire, and special procedures such as individual contacts. One thousand survey packets were mailed to the 1,000 selected occupational therapists to invite them to participate in the study. Each of the packages contained a cover letter signed by the investigators, a questionnaire, and a self-addressed and postage-paid return envelope. The cover letter instructed the participants to answer the questions on the questionnaire and return it to the investigators via the enclosed envelope. A modified follow-up procedure suggested by Dillman (2000) was implemented in the study to increase the response rate, including mailing a postcard reminder, resending the survey packet, e-mailing, and telephoning participants. These follow-up efforts were important in boosting the response rate of the study, especially because the study was implemented around the time of the September 11, 2001, tragedy and anthrax mail scare. The initial response rate of the survey was not promising. During final contact, individual telephone calls were made by the investigators and a research assistant to those participants who did not respond.

Response rate of the survey. Of the 1,000 surveys mailed, 6 surveys were not deliverable and were returned to the investigators. A total of 413 surveys were returned. Among the returned surveys, 56 respondents stated that no practice errors had been made. Seventeen indicated that they did not practice in physical rehabilitation or geriatrics settings. Eighty-two surveys were returned blank. Four respondents did not complete the survey because they had not practiced in years. Another 2 reported that they had filled out the survey questionnaire during their state conference when pilot testing of the questionnaire was implemented. Additionally, 7 respondents returned their surveys but declined to participate in the study. Thus, 245 surveys were completed and used in the data analysis of the study. The sampling error based on the completed sample was at best ±6%.

Data Analysis

Quantitative data analysis. Quantitative data analysis was conducted through several phases. Descriptive statistical analysis was first implemented to examine demographic information and nominal data. Next, factor analysis was used with each of the following sections to identify factors: causes of the error, impact on practice (subsection of impact of error); coping with the error, and work site response to the error. Results of the factor analysis in conjunction with investigators’ consensus were used to create scales and subscales from the questionnaire (see Table 1). Each scale consisted of different numbers of questions and the scale scores from Factor Analysis and Team Consensus

<table>
<thead>
<tr>
<th>Scale</th>
<th>Number of Items</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Causes of the error</td>
<td>25</td>
<td>.70</td>
</tr>
<tr>
<td>Misjudgment</td>
<td>8</td>
<td>.51</td>
</tr>
<tr>
<td>Overload or time restraint</td>
<td>6</td>
<td>.56</td>
</tr>
<tr>
<td>Inexperience or knowledge</td>
<td>3</td>
<td>.85</td>
</tr>
<tr>
<td>Insufficient communication</td>
<td>3</td>
<td>.80</td>
</tr>
<tr>
<td>Patient related</td>
<td>5</td>
<td>.56</td>
</tr>
<tr>
<td>Impact on practice</td>
<td>11</td>
<td>.76</td>
</tr>
<tr>
<td>Seeking advice</td>
<td>2</td>
<td>.75</td>
</tr>
<tr>
<td>Vigilance</td>
<td>3</td>
<td>.48</td>
</tr>
<tr>
<td>Internalization</td>
<td>6</td>
<td>.74</td>
</tr>
<tr>
<td>Coping with the error</td>
<td>20</td>
<td>.71</td>
</tr>
<tr>
<td>Defensive coping</td>
<td>8</td>
<td>.67</td>
</tr>
<tr>
<td>Constructive coping</td>
<td>12</td>
<td>.70</td>
</tr>
<tr>
<td>Acceptance of understanding</td>
<td>3</td>
<td>.60</td>
</tr>
<tr>
<td>Compensation or apology</td>
<td>3</td>
<td>.57</td>
</tr>
<tr>
<td>Learn from it</td>
<td>6</td>
<td>.60</td>
</tr>
<tr>
<td>Work site response to the error</td>
<td>6</td>
<td>.43</td>
</tr>
<tr>
<td>Support and perspectives</td>
<td>3</td>
<td>.63</td>
</tr>
<tr>
<td>Judgmental</td>
<td>3</td>
<td>.57</td>
</tr>
</tbody>
</table>

Table 1. Reliability Coefficients (Internal Consistency) of Scores on the Likert Scale Sections of the Survey Questionnaire Derived From Factor Analysis and Team Consensus

Downloaded From: http://ajot.aota.org/ on 11/14/2018 Terms of Use: http://AOTA.org/terms
of the respondents were attained by summing participants’ responses to the questions. Lastly, inferential statistical analysis such as independent $t$ test, Spearman correlation test, and one-way analysis of variance (ANOVA) was used to explore the relationships among different variables of interest. These included the possible relationship between the number of years of practice experience and the perceived impact on practice, and the relationship between disclosure or nondisclosure of errors and the types of coping strategies used by occupational therapists. It also examined the relationship between disclosure or nondisclosure of errors and work site administrators’ responses to errors. Measures on dependent variables in the inferential statistical analyses were obtained by summing the scale or subscale scores. The alpha level of the study was set at .05. This significant level, however, was adjusted because of the multiple comparisons conducted.

**Qualitative data analysis.** Content analysis was implemented to analyze respondents’ descriptions of the errors. Respondents’ descriptions were first transcribed by a research assistant. Next, two investigators independently and separately analyzed the transcription using a content analysis method suggested by Bogdan and Biklen (1992). With this method, results of the analysis were reviewed and compared by the two investigators. The two investigators agreed on 94% and disagreed on only 6% of the categorizations. When discrepancies were found in the analysis between the two investigators, the investigators met, reviewed, and discussed the data until a consensus was reached. Categorizations of the types of practice errors followed the occupational therapy practice process delineated by Pedretti and Early (2001), i.e., referral, screening, evaluation, intervention planning, intervention, reevaluation, transition services, and discontinuation of service.

**Results**

**Scales of the Survey Questionnaire**

Items of each section of the questionnaire were grouped into scales or subscales based on the results of factor analysis along with the investigators’ consensus. *Causes of the error* were described in five scales: misjudgment (8 items), overload or time restraint (6 items), inexperience or knowledge (3 items), insufficient communication (3 items), and patient related (5 items). *Impact on practice* consisted of 3 scales: seeking advice (2 items), vigilance (3 items), and internalization (6 items). *Coping strategies* were measured by two scales: constructive coping (12 items) and defensive coping (8 items). In turn, *constructive coping* contained three subscales: acceptance of understanding (3 items), apologizing and compensating (3 items), and learning from it (6 items). *Defensive coping* was measured by one scale with 8 items. *Work site response* was composed of two scales: supportive (3 items) and judgmental (3 items). A detailed description of the scales of the questionnaire along with the internal consistency reliability coefficients (Cronbach’s alpha) of each scale and subscale are shown on Table 1.

**Characteristics of the Respondents**

Among the 245 occupational therapy respondents, 24 were male and 218 were female. Gender information on the remaining three was missing. One hundred sixty-one respondents had a baccalaureate degree and 26 had a master’s degree. The number of years in practice was: first year of practice, 11 participants; 2 to 5 years, 58 participants; 6 to 10 years, 45 participants; 11 or more years to 20 years, 131 participants.

**Types of Errors**

Participants reported a total of 247 incidents (two participants described two errors each) that they considered to be practice errors. Sixteen of the practice errors did not meet the definition of the errors as defined in this study and were deleted by the investigators. Categorization of the reported errors suggested that the vast majority of the errors occurred in the intervention phase of the occupational therapy process. To further specify the types of the errors in the intervention phase, the investigators of this study identified several subcategories in this phase. The identified subcategories consisted of intervention communication (i.e., communication among professionals), intervention education (i.e., education provided by occupational therapists to patients, patients’ families, and other professionals), intervention documentation (i.e., documentation that occurred during the intervention phase), intervention supervision (i.e., supervision provided by occupational therapists to other professionals, staff members, and fieldwork students), and intervention treatment (i.e., direct treatments provided by occupational therapists). Table 2 delineates the frequencies and percentages of different types of the errors.

**Causes of the error.** Respondents identified various causes of errors. Table 3 summarized the number and the percentage of the respondents who either agreed strongly or agreed somewhat with each of the questions pertaining to the causes of the errors. More than 74.7% of the 245 respondents reported that errors were made because of misjudgment (i.e., “I misjudged the situation”). Forty-six percent of the respondents attributed the errors to inadequate preparation (i.e., “There was lack of preparation on my part”). Lack of experience was reported as the third most frequent cause of error, 44% (i.e., “Insufficient experience.
Table 2. Types of Reported Errors Based on Occupational Therapy (OT) Practice Process

<table>
<thead>
<tr>
<th>Occupational Therapy Process</th>
<th>Number of Errors (%)*</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referral</td>
<td>12 (5.1%)</td>
<td>Treated a pt. with distal radius fx. using standard protocol including P/AROM of digits. Pt. had sustained elbow fx. and fx. to 3rd MC during same accident. This information was not included in doctor’s orders for tx. Did question pt. to pain in hand with AROM of digits and was told about fx. to MC. Called doctor to request advice—told 4 calls. No injury sustained by initial protocol but could have if I would have been more aggressive.</td>
</tr>
<tr>
<td>Screening</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>Evaluation</td>
<td>5 (2.2%)</td>
<td>Upon doing an evaluation of a quadriplegic by myself (whose primary area of practice is an administration/owner of a rehab firm), the UE muscle testing was improperly done, and the fitting of the wrist driver splints was not done well and with decreased confidence. Additionally the pt.’s questions about self-catheterization could not be addressed by OT in regards to manipulation of the catheterization materials via substitutive movements.</td>
</tr>
<tr>
<td>Intervention planning</td>
<td>8 (3.5%)</td>
<td>Pt. had diagnosis of lateral epicondytis on the right. He was also an incomplete quad secondary to spinal hematoma. He complained of numbness in right arm and I initially told him to wait several days to see if numbness decreased and then to see his MD if it continued. He did and was diagnosed as having another bleed on his spine.</td>
</tr>
<tr>
<td>Intervention</td>
<td>203 (87.9%)</td>
<td></td>
</tr>
<tr>
<td>Intervention communication</td>
<td>21 (9.1%)</td>
<td>I treated the wrong patient. I was supposed to see her roommate. I was covering for another therapist on the weekend. So, the pt. I treated was not on caseload and I hadn’t read her chart. It turned out fine and we ended up picking up this pt. the next day. The pt. I was supposed to see had cognitive issues and didn’t seem to notice she didn’t have therapy. The pt. I saw also had mild cognitive issues and seemed to enjoy ADL training.</td>
</tr>
<tr>
<td>Intervention education</td>
<td>6 (2.6%)</td>
<td>Due to having an unusually high caseload in a day rehab setting, I did not thoroughly educate one of my geriatric patients (with diagnosis of CVA) regarding donning and doffing a neoprene shoulder support for her hemiplegic upper extremity. I reviewed it with her once, but should have reinforced the education. This pt. was noted at a later point to be wearing the shoulder support too tightly, which could have caused discomfort in her other UE (due to nerve compression from strap positioned under the other UE). This error was caught before any damage/discomfort occurred.</td>
</tr>
<tr>
<td>Intervention supervision</td>
<td>33 (14.3%)</td>
<td>Leaving a pt. unattended for 2 minutes, which resulted in the fall of the pt. off the edge of the bed. No injuries, but incident shook me up.</td>
</tr>
<tr>
<td>Intervention documentation</td>
<td>10 (4.3%)</td>
<td>Due to time constraints, writing a brief note rather than comprehensive note concerning therapy given and results had on pt. This had a significant effect on the payment for the client. Or putting in the wrong code for billing.</td>
</tr>
<tr>
<td>Intervention treatment</td>
<td>133 (57.6%)</td>
<td>When covering for our CHT, I failed to give tendon-gliding exercises to a pt. who was post-op tendon reconstruction. When our hand therapist returned the next day, I reviewed the case with him. He felt the pt. needed to be contacted and instructed in the exercises to prevent tendon adhesions.</td>
</tr>
<tr>
<td>Reevaluation</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>Transition services</td>
<td>2 (0.7%)</td>
<td>Pt. was ok’ed by OT to be in transitional living apt. She fell out of bed and fractured her hip. The error was pt. wasn’t OK to be in apartment.</td>
</tr>
<tr>
<td>Discontinuation</td>
<td>1 (0.4%)</td>
<td>D/C’d a patient’s splint without MD approval.</td>
</tr>
<tr>
<td>Total</td>
<td>231 (100.0%)</td>
<td></td>
</tr>
</tbody>
</table>

*Percentage was calculated based on the total number of 231 errors reported by the survey respondents, i.e., percentage = the total number of errors in a specific category divided by the total number of errors reported (231).

Note. Pt. = patient; fx. = fracture; P/AROM = passive/active range of motion; MC = metacarpal; tx. = treatment; MD = physician; UE = upper extremity; CVA = cerebral vascular accident; CHT = Certified Hand Therapist; D/C = discontinued.

on my part”), followed by inadequate knowledge of the occupational therapist, 33.5% (“My knowledge was inadequate”) and miscommunication between professionals, 32.7% (“Miscommunication occurred between myself and other health care professionals”).

Impact of Error

Impact on patients. When asked what adverse effects the error had for the patient, almost one-half of the participants (42.3%) reported that errors caused emotional distress. More than 30% (34.6%) of the participants chose Other effect on patient, but did not specify what impact. The third most frequently mentioned impact (20.8%) was “damage to the skin integrity.”

Impact on occupational therapists. Respondents articulated tremendous emotional unease after making errors. About 90% of the participants felt (either felt a little, quite a lot, or a great deal) remorseful (93%), angry at self (92%),
and guilty (89%). More than 70% of the participants admitted that making errors made them feel fearful and scared (72%), bad (75%), ashamed (70%), and embarrassed (71%). More than half of the participants (52.7%), however, reported that making errors did not cause strong emotional responses such as being panicked (petrified, horrified).

**Impact on practice.** A vast majority of the respondents reported becoming more vigilant after the error occurred. Ninety-two percent of the respondents contemplated becoming more vigilant after the error occurred, and a summary of the coping strategies is listed in Table 5. The top five coping strategies cited by the respondents (either used somewhat, used quite a bit, or used a great deal) were the following:

<table>
<thead>
<tr>
<th>Coping Strategies Reported by Participants</th>
<th>Number</th>
<th>Percentage*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apology Compensation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Talked to someone about feelings</td>
<td>87</td>
<td>35.5%</td>
</tr>
<tr>
<td>Accepted empathy from others</td>
<td>85</td>
<td>34.6%</td>
</tr>
<tr>
<td>Sought advice from a friend or relative</td>
<td>33</td>
<td>13.5%</td>
</tr>
<tr>
<td>Apology Compensation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did something to make up to family</td>
<td>29</td>
<td>11.8%</td>
</tr>
<tr>
<td>Apologized to patient</td>
<td>118</td>
<td>48.1%</td>
</tr>
<tr>
<td>Apologized to supervisors/colleagues</td>
<td>51</td>
<td>20.9%</td>
</tr>
<tr>
<td>Learned From It</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doubled efforts to correct situation</td>
<td>104</td>
<td>42.5%</td>
</tr>
<tr>
<td>Promised self next time things would be better</td>
<td>176</td>
<td>71.8%</td>
</tr>
<tr>
<td>Tried to keep feelings from interfering</td>
<td>136</td>
<td>55.5%</td>
</tr>
<tr>
<td>Concentrated on next step</td>
<td>158</td>
<td>64.9%</td>
</tr>
<tr>
<td>Made a plan and followed it</td>
<td>131</td>
<td>53.8%</td>
</tr>
<tr>
<td>Refused to think about it</td>
<td>25</td>
<td>10.2%</td>
</tr>
</tbody>
</table>

* Percentages were generated based on the total number of 245 respondents, i.e., percentage = the total number of respondents who agreed (either agreed somewhat or agreed strongly) with the statement was divided by the total number of respondents who returned the survey (245).
• promised to self that next time things would be better (71.8%)
• concentrated on the next step (64.5%)
• tried to keep feelings from interfering with treatment (55.5%)
• made a plan and followed it (53.5%)
• apologized to the patient (48.1%)

Two independent t tests revealed differences between whether respondents disclosed the errors in using either constructive or defensive coping strategies. Respondents who disclosed the errors scored significantly higher in using constructive coping strategies than those who did not, \( t = .354, p = .113 > .008 \) (adjusted alpha \( = .05/2 = .025 \)). Respondents who disclosed the errors also scored lower in using defensive coping strategies than those who did not. Such a difference, however, was not at the adjusted significant level, \( t = .060, p = .371 > .008 \), and judgmental responses of work sites, \( r = .432, p = .000 < .008 \). Supportive responses were negatively related to the defensive coping strategies \( r = -.060, p = .371 > .008 \), and judgmental responses were positively related to constructive coping strategies \( r = .105, p = .113 > .008 \). These correlations, however, did not reach the adjusted significant level.

**Work Site Responses to Error**

Ways in which administrators and colleagues at work sites responded to the practice errors when they occurred are summarized in Table 6. The top three most frequent responses (either agreed somewhat or agreed strongly) were “I got emotional support I needed from colleagues” (81.2%), “My colleagues tried to put my error in perspective” (77.6%), and “I was required to follow reporting procedures” (49.0%). All three responses were items in the subscale of *support and perspective* rather than in the subscale of *judgmental* (being judgmental about the errors). Spearman’s rho tests revealed significant correlations between the constructive coping strategies and supportive responses of the work sites, \( r = .354, p = .000 < .008 \), and between the defensive coping strategies and judgmental responses of work site, \( r = .432, p = .000 < .008 \). Supportive responses were negatively related to the defensive coping strategies \( r = -.060, p = .371 > .008 \), and judgmental responses were positively related to constructive coping strategies \( r = .105, p = .113 > .008 \). These correlations, however, did not reach the adjusted significant level.

<table>
<thead>
<tr>
<th>Table 6. Work Site Responses to Errors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Responses</strong></td>
</tr>
<tr>
<td>Support and perspective</td>
</tr>
<tr>
<td>I got emotional support I needed from colleagues</td>
</tr>
<tr>
<td>My colleagues tried to put my error in perspective</td>
</tr>
<tr>
<td>I was required to follow reporting procedures</td>
</tr>
<tr>
<td>Judgmental</td>
</tr>
<tr>
<td>Work site norm inhibited me from talking about the errors</td>
</tr>
<tr>
<td>Overall, the administration was judgmental about error</td>
</tr>
<tr>
<td>Punitive measures such as disciplinary action and sanctions occurred</td>
</tr>
</tbody>
</table>

**Discussions**

We examined occupational therapists’ perspectives and responses on practice errors in physical rehabilitation (71.4% of the respondents) and geriatrics settings (28.6% of the respondents). Two hundred and forty-five of the 994 invited occupational therapists across the United States responded to the questionnaire. Findings of the study indicated that various practice errors occur in occupational therapy, that making errors had a remarkable impact on the occupational therapist’s practice, and that a variety of coping strategies were used when errors occurred.

One noteworthy finding of the study was that the vast majority of the errors, 88.6%, occurred during the intervention phase of the occupational therapy process. Among these reported errors, nearly 60% of them were intervention treatment errors (e.g., hot pack burn to small area of insensitive hand; failed to give tendon-gliding exercises to a patient who was post-operation tendon reconstruction; failed to teach hip precautions to a patient who had a hip pinning). Misjudgment was reported as the most common cause for making errors. Implications of this finding are mixed. On the one hand, this finding may be a promising one, suggesting that most of the errors made by occupational therapists can be prevented if they are caused by misjudgment. Occupational therapists can reduce practice errors caused by misjudgment by becoming more vigilant, paying attention to all circumstances, and not rushing to make a decision. On the other hand, however, this finding may suggest that sufficient experience plays a vital role in preventing or reducing practice errors because one may argue that adequate judgment can only be nurtured and fostered through experience and development. If such an argument is true, one may conclude that lack of experience can be the leading cause for practice errors in occupational therapy. This speculation is further echoed by the other findings of the study. Lack of experience was the third most articulated leading cause of making errors in this study, followed by inadequate knowledge and information. Nevertheless, the results of this study related to causes of making errors are congruent with that of our earlier focus group studies (Lohman et al., 2003; Scheirton et al., 2003), as well as with the results of research studies in other professions (Meurier et al., 1997; Wu et al., 1991). For example, Meurier and colleagues’ study in nursing (1997) and Wu et al.’s research in medicine (1991) both indicated that lack of experience, lack of knowledge or information, and faulty judgment were among the most commonly attributed causes of errors.

Such findings have important implications for professional education and training in occupational therapy. With
didactic education, common situations that lead to practice errors can be simulated in classrooms and case studies can be used to discuss potential error situations. Furthermore, fieldwork educators can also point out key areas of errors in their practice settings during orientation to the facilities. These educational experiences would enhance students’ awareness of safety in practice.

Similar to the studies by Wu et al. (1991) and Meurier et al. (1997), the current study also found that lack of sufficient time contributes considerably to the occurrence of errors. Lack of preparation, too high of a patient caseload, and insufficient patient treatment time are other frequently attributed causes of making errors. Time restraints often occur because of productivity demands established by facilities in which occupational therapists are employed. Often these time restraints result from the influence of public policy regulations, such as the prospective payment system (PPS) in skilled nursing facilities or from managed care regulations. With PPS, patients receive occupational therapy based on a rehabilitation level (i.e., ultra high, high, median, or low) and therapy occurs for a set amount of time for each level. For example, at the ultra high level, patients receive 720-min service from at least two disciplines or receive service from one discipline for at least 5 days (Centers for Medicare & Medicaid Services, 2001). This time limitation may put pressure on the occupational therapists and patients for quick treatment results and may be inappropriate for some patients who could benefit from longer therapy.

Not surprisingly, making errors has emotional effects on occupational therapists. Remorseful, angry at self; and guilty are the most commonly reported feelings by the respondents. Less common is the strong emotional feeling of being panicked, petrified, or horrified. The latter emotions reflect more severe negative feelings, and the emotional impact can be more burdensome. The fact that occupational therapists often report feelings of guilt is an encouraging finding suggesting indications of having a conscience, an awareness of what one ought to do or ought not to do, or an understanding of what is morally right or wrong. This is the core of a person’s humanity and the guide for maintaining high ethical standards needed for occupational therapy practice. As the results of this survey fortunately suggest, less burdensome and positive feelings of guilt from making errors occur more often than the more severe negative emotions such as feeling panicked.

Findings pertaining to the impact on practice are especially encouraging. Respondents reported that after the incident, they became more vigilant in their practice. They reflected on errors, paid more attention to details, and changed their treatment approaches. These findings suggest that making errors has a constructive impact on the occupational therapist’s future practice. As we are all aware, to err is human. No matter how perfect we are or how hard we try, errors inevitably occur. What matters most, however, is what we do after the errors occur.

An interesting finding was that respondents who were in their 2nd to 5th year of practice when the errors occurred perceived the impact on their own practice to be much higher than those who were in their 11th or more year of practice. One possible explanation is that occupational therapists in their earlier years of practice were in the process of acquiring and developing experience and expertise. When errors occurred, they learned much more from the incident than those who have been practicing in the profession for many years. Consequently, the lessons that newer occupational therapists learned had far more impact on their practice. Or perhaps this occurred because, in the process of developing expertise, occupational therapists were just more aware of each treatment situation. Further research is needed to investigate these speculations.

Our findings also suggest that respondents adopted both constructive and defensive strategies to cope with the consequences of errors. The top five strategies reported by the respondents, however, are all constructive coping strategies: promised to self that next time things would be better; concentrated on next step; tried to keep feelings from interfering; made a plan and followed it; and apologized to patient. This finding suggests that occupational therapists for the most part could handle the errors appropriately when errors occurred.

Disclosing the errors seemed associated with the coping strategies that respondents adopted. This finding suggests that disclosure of errors is more likely to lead to constructive coping mechanisms and changes in the occupational therapist’s future practice. Such findings are consistent with those from previous studies (e.g., Meurier et al., 1997; Witman, Park, & Hardin, 1996; Wu et al., 1991), in which it was found that truthful disclosure of errors can foster learning by professionals and affect future practice positively, and is less likely to lead to litigation. Collectively, these studies have suggested that when errors occur, health care professionals should be encouraged to admit and disclose the errors, accept the responsibilities, and make constructive changes in practice. In fact, an overwhelming majority of the respondents reported positive changes in their practice after the error incident (e.g., paying attention to details, changing the treatment approach). In addition, a noticeable finding was that 91.8% of the occupational therapists disclosed the errors to someone when the errors occurred. In comparison, fewer than 25% of the surveyed house officers (physicians) disclosed the errors in Wu et al.’s study (1991). Various factors, such as being members of different profes-
essions (occupational therapy or medicine) and the nature and severity of the errors, may have contributed to the discrepancy of the findings. Future studies are warranted to examine these propositions.

Work site responses to the errors were found to be supportive. Colleagues of the respondents usually offered emotional support and put the incident in perspective. Such a finding is in alignment with that of our focus group study (Scheirton et al., 2003), indicating that occupational therapists appear to understand the human nature of their health care colleagues. Although preventing and reducing practitioners’ errors is a desirable outcome in health care services, it is also imperative to understand that errors and mistakes are inevitable given our human nature. Administrators and colleagues need to transcend from an outdated view of blaming, sanctioning, or firing, to a focus on root cause analysis, learning from these errors, and assisting in the development of error prevention strategies to promote patient safety. Along with this initiative is the practitioner’s duty to disclose errors when they occur.

The findings of the current study are limited in a number of ways. First, in spite of our extreme efforts to improve it, the response rate of the study was low. The reason that many occupational therapists chose not to respond may be because of their fear of possible litigation. In fact, some respondents on follow-up admitted that they did not report their errors when surveyed for fear of litigation. Another factor that might have contributed to the low response rate was the lengthy questionnaire. Future efforts should be made to shorten the questionnaire while preserving its ability to collect sufficient information. Second, no planned efforts were in place in this study to examine and compare the characteristics of respondents and nonrespondents. A substantial number of occupational therapists who were invited (994 - 245 = 749) did not participate in the study. It is not clear whether these therapists did not commit any errors or whether they were reluctant to disclose the errors. The potential impact of nonresponder bias was not examined in the study. Additionally, respondents of the study were selected from six identified work settings to represent occupational therapists who practice in physical rehabilitation and geriatrics. Occupational therapists who practice in other settings might also meet the participant criteria of the study but were excluded from the study. Such shortcomings as described may further compound the uncertainty in generalizing the findings of the study. Third, as in any survey study, social desirability is an important confounding factor, especially in examining such a sensitive issue as practitioner error. Future studies need to use other research approaches to investigate the correspondence between perception and behaviors. Finally, some associations were found in this study that may result from other unmeasured confounding variables, and no cause-and-effect relationships should be inferred. Caution must be taken when interpreting and applying the findings of this study.

Conclusion

As with other health care professions, errors are frequent and inevitable in occupational therapy. What matters most is how occupational therapists learn from these errors and develop preventive strategies to reduce errors and improve patients’ safety. When errors occur, disclosure is an important first step to foster such learning; and it often leads to positive outcomes with patients, occupational therapists, and future practice. Fortunately, occupational therapists already have an established regular routine of disclosing errors and good support mechanisms from colleagues. Feelings of remorsefulness and guilt, though painful, can have a beneficial effect (through disclosure) of change in the individual and the system. Finally, it remains important that work site administrators encourage occupational therapists to honestly disclose errors, learn from the incidents, and use constructive changes in future practice. Learning and practice change may be more desirable than blaming, sanctioning, and demanding 100% perfection! ▲

Acknowledgment

This project was supported by a grant awarded to the authors by the Health Future Foundation. The authors would like to thank AOTA for their letter of support for this research project. Our appreciations are extended to occupational therapists across the United States for their willingness to participate in this project. We also would like to thank Jillian Dworak, OTD, OTR/L, for her assistance with this research project.

References


Downloaded From: http://ajot.aota.org/ on 11/14/2018 Terms of Use: http://AOTA.org/terms


Edited by Deborah Yarett Slater, MS, OT/L, FAOTA

Provides context for developing and implementing ethical philosophy and practices and gives helpful information for resolving ethics issues in today’s health care environment; identifying appropriate jurisdictions for ethics complaints; understanding the role of the Ethics Commission; and more. Ideal for students, educators, practitioners, administrators, and scientists. Included CD-ROM provides core Code documents.


Order #1139D-J $29 AOTA Members, $42 Nonmembers

Call 877-404-AOTA Shop www.aota.org (Books, Products, & CE)