

Child Maltreatment: What Attitudinal Factors Drive Graduate Students in Speech-Language Pathology to Report?

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Abstract

Purpose: To understand the factors that predict the likelihood graduate students in speech-language pathology will report maltreatment in order to assist in minimizing its occurrence and child mortality.

Method: Graduate students in speech-language pathologists (N=148) attending accredited programs in the United States were surveyed regarding their attitudes (e.g., commitment, confidence, and concern) toward child maltreatment, including the likelihood they will report alleged abuse and neglect. The study was controlled for ethnicity and gender. The results of the survey were analyzed using hierarchical multiple regression and showed the strength of the relationship between the predictor variables (e.g., commitment, confidence, and concern), including the covariates (e.g., gender and ethnicity) on the criterion variable (e.g., reporting practices). The Theory of Reasoned Action served as the theoretical framework.

Results: The results of the study suggested that the attitudinal dimensions of commitment and concern, including the covariate gender, have a statistically significant contribution to the likelihood that graduate students in speech-language pathology will report alleged child maltreatment.

Conclusions: As the attitudinal dimensions of commitment and concern increase, so does the likelihood that graduate students in speech-language pathology will report suspected maltreatment, especially females.

Keywords: Child Maltreatment; Speech-Language; Pathology; Graduate students

Introduction

Child maltreatment is a global public health issue; however, its prevalence in the United States is markedly severe. The 2012 Report on Child Maltreatment estimates that around 6.3 million children in the United States were referred to child protective services (CPS) due to alleged abuse or neglect [1]. Of the 6.3 million children referred, around 62% were investigated by CPS. Those not investigated were screened out for a number of reasons including: the referral not being related to maltreatment or a lack of information warranting investigation [2]. Further review of the aforementioned 62% identified 686,000 unique victims of child maltreatment, including 1,640 fatalities. Approximately 46.7% of the victims were less than five years of age [1].

Parents' unrealistic expectations regarding child behavior and associated development, including those with delays, have been identified as contributing risk factors [3]. The literature suggests that "parents use more physical, punitive, and less nurturing strategies with language delayed children than do parents of typically developing children". Certainly, this does not necessarily equate with maltreatment in every case. Nonetheless, the implications aligning developmental delay or disability and child maltreatment must not be overlooked as approximately 13% of victims also have a disability [1-3].

The Child Abuse Prevention and Treatment Act (CAPTA) (42 U.S.C. §5101) defines child abuse and neglect as "any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual abuse or exploitation" of an infant or child including "imminent risk of serious harm" (U.S. Department of Health and Human Services, 2011, p.15). CAPTA was initially passed by the United States Congress in 1974 and amended in 2010. As a federal law, CAPTA was created to define child maltreatment, but to also guide state legislatures in the development of policies, regulations, and implementation of programs (Child Welfare Information Gateway, 2012). The federal government provides a minimum set of guidelines that individual states must follow; however, the primary responsibility for the protection of children resides within each singular state. The definition of child abuse and neglect "refers specifically to parents and caregivers" and defines a "child as a person who is younger than 18 or who is not an emancipated minor" [1-4].

In the United States, most states recognize four primary types of maltreatment including: physical abuse, sexual abuse, psychological abuse, and neglect. Within the auspices of CAPTA's definition of maltreatment is embedded the notion of complex trauma. Complex trauma is identified in the literature as repetitive subjection to traumatic events and the resultant effects of such exposure on a child's development [5]. With regard to maltreatment, it often includes the repetitive exposure to childhood sexual, physical, and/or psychological abuse, usually within the contexts of social and emotional harm and neglect [6].

Child maltreatment has been shown to impact an individual's maturation, quality of life, mental health, physical health, and ability to function within society [7-10]. The trauma associated with such acts has been described as complex and is often chronic, progressively intense, invasive, and shameful for many victims [10]. A child may often experience maltreatment on a daily basis spanning several weeks, months, or years [11]. Mental sequelae associated with abuse and neglect may include depressive and anxiety disorders; sexual dysfunctions; feeding and eating disorders; and substance-related diagnoses [8]. Specific examples noted in the literature largely center on depression and posttraumatic stress disorder [11,12]. As such, adults who were abused as children tend to live alone, have a higher prevalence of divorce, and are approximately four times more likely to describe themselves as being unhappy [8]. Additional psychosocial consequences also include: feelings of helplessness and a sense of disregard for a person's boundaries and will [12]. Moreover, individuals adapting to complex trauma must also cope with violation of their identity, credence, and value [10]. A strong association is also noted between childhood maltreatment and substance abuse occurrence later in life, including smoking cigarettes [8,13,14]. Conversely, substance abuse problems have also been linked to child victimization [14].

The possibility of re-victimization must also be considered when a person has been assaulted, including flashbacks and mental imagery of the experience(s). Physical health maladies and somatic symptoms have also been aligned with child maltreatment history, including chronic fatigue syndrome, chronic pain, diabetes, headaches, and cardiovascular disease, especially in women. Neurobiological changes in brain development have also been identified. Dysregulation secondary to the stressors associated with maltreatment appears to impact serotonin production, and the sympathetic nervous and limbic systems [12]. Children with language impairments exhibit more social and emotional problems—including behavioral difficulties—when compared with age-matched peers [15].

Speech-language pathologists working in early intervention and the schools are uniquely positioned to assist in both the detection and prevention of child maltreatment. This is due to the fact that expressive and receptive language deficits are often co-morbidly associated with both child neglect and abuse [16]. "Children with disabilities lack understanding of what they are experiencing, the language and communication skills to convey that they are being harmed, and sufficient self-advocacy and self-protection skills to stop the maltreatment" [17].

As such, parents with children who are language delayed or disabled may be unable to effectively use richer language and support literacy when reprimanding or disciplining. The addition of other concomitant developmental delays or complex diagnoses serves to confound relationship issues within the context of the family. This increases the likelihood of the occurrence of possible child maltreatment.

An awareness that child maltreatment occurs is not the issue. The ongoing dilemma centers on early detection, identification, and prevention. Victims of child abuse and/or neglect are (a) likely to fall in the age range from birth-to-five years, and (b) be at higher risk of need requiring a skilled therapeutic service (i.e., speech/language therapy) due to significant developmental delay or disability [18-20].

The American Speech-Language-Hearing Association (ASHA) mandates that applicants for certification be able to interpret, integrate, and synthesize diagnostic information (including case histories) in order to arrive at appropriate recommendations for intervention.

Within this standard of practice, speech-language pathologists must utilize the community-based relationships and the one-on-one interactions with the children and families they serve in order to educate and intervene should maltreatment be suspected. In order to carry out this mandate, speech-language pathologists must be aware of the varied signs of child abuse and/or neglect but also be knowledgeable regarding the reporting practices of their individual states.

Educational preparation for speech-language pathologists is, at its core, aligned with a commitment to clinical competence. Competence as it relates to professional practice is connected with an ability to make appropriate decisions that are situation specific [21]. This requires a greater focus on application rather than on typical content mastery and has certainly become the impetus for graduate level speech therapy training programs in the United States.

The decision to report alleged child maltreatment is an individually based choice that should be informed by both practical and empirical data. From a practical viewpoint, practicing speech-language pathologists may gain knowledge from their day-to-day clinical interactions with clientele. Practicing speech-language pathologists may also glean knowledge on child maltreatment by electing to engage in self-guided study on the topic as part of their annual or biannual continuing education licensure requirements. From a practical viewpoint, graduate students in speech-language pathology may gain knowledge from their intern- or externships afforded them during their graduate studies as guided by mentoring speech-language pathologists. Students may also receive a rudimentary introduction to the topic of child maltreatment, although it is not mandated by ASHA nor itemized as a primary pedagogical area of focus. The intent of this initial study is to make an empirical contribution to the scant knowledge base currently available in effort to impact the training of graduate students in speech-language pathology now and practicing speech-language pathologists going forward.

ASHA's Code of Ethics informs the practice of speech-language pathology as it relates to child maltreatment but does not specifically mandate how or when to report. Principle I maintains "individuals shall honor their responsibility to hold paramount the welfare of persons they serve professionally or who are participants in research and scholarly activities, and they shall treat animals involved in research in a humane manner". Rules M and N of principle I maintains: "individuals shall adequately maintain and appropriately secure records of professional services rendered and shall allow access to these records only when authorized or when required by law" and "individuals shall not reveal, without authorization, any professional or personal information about identified persons served professionally . . . unless doing so is necessary to protect the welfare of the person or of the community or is otherwise required by law".

An improved understanding of the factors that contribute to and predict negligent reporting, especially as they relate to attitudes toward child maltreatment, would be beneficial in the training of future speech-language pathologists. The tenets of the Theory of Reasoned Action (TRA) directly align with a person's attitudes and his or her actions, such as reporting child maltreatment [21,22]. Therefore, a person's intent or reason for carrying out a decision or action is the most critical factor. The theory contends the probability is high a person will engage in a behavior when he or she intends to perform the said behavior. As such, TRA provides a theoretical framework for this study.

TRA consists of two elements that collectively comprise behavioral intention. These elements include attitudes and subjective norms. TRA suggests intention is an immediate antecedent of behavior. As an extension or subtype of attitude one may also include the dimensions of commitment, confidence, and concern. The literature on demographic variables suggests possible relationships between ethnicity and gender on reporting practices. As such, ethnicity and gender were included as covariates [23-26].

When considering child maltreatment, a speech-language pathologist's attitudes toward abuse, even reporting practices, can be identified by how the therapist "feels about the behavior and is generally measured as a favorable or unfavorable mindset" [27]. The individual may also reflect on previous experiences. A person's "positive attitude toward a certain behavior strengthens his/her intention to perform the behavior" [28]. A word of caution is noted with regard to attitudinally-based research studies whereby a greater importance is placed on ascertaining specific qualitative definitions of attitudes as opposed to objects or things [24].

The second element preceding behavioral intent as it relates to TRA is the notion of subjective norms. The term subjective implies opinion. It is "an individual's view about what significant others think the individual should do in a given context". The term subjective also implies social and social begets influence. "In studies of attitudes and behavior, the dependent variable is one that is shaped by social forces, not only private preferences". From the perspective of the graduate student, subjective norms could be aligned with the student's preceptor, a mentor, social media, the media in general, or a professor. It is the judged behavior of a given social circle. The subjective norm is considered secondary to the person's attitude and may be considered consistent with referent beliefs. A person's subjective norms are influenced by their motivations to please another person. Whereas the central focus of this study was placed on child maltreatment and reporting practices, the element of subjective norms or opinions was removed. This is an appropriate course of action, as safety—including the possibility of death—is a consideration [28-30].

To date, there is no available research specific to the reporting practices of speech-language pathologists whether classified as practicing professionals or graduate students. Secondary sources suggest reasons as to why speech-language pathologists may fail to report alleged maltreatment. Due to the recurring theme noted in the literature highlighting a lack of pedagogical training across disciplines regarding child maltreatment and reporting methodology, further research appears indicated [25,31-35].

Gender and ethnicity were chosen as categorical variables and have been used in previous studies examining underreporting practices of child maltreatment in educators. Specifically, the research suggests that cultural background (ethnicity) may influence an individual's perception of maltreatment or willingness/unwillingness to report it". With regard to gender, "females have been found to be less tolerant of physical, emotional, and sexual abuse than males" but "are no more likely to report abuse" than their male counterparts [25].

Therefore, the researchers hypothesize that there is a statistically significant predictive relationship between graduate students' attitudes toward child maltreatment (i.e., commitment, confidence, and concern)—including demographic covariates (i.e., gender and ethnicity)—and their decision to report child maltreatment.

Methods

A predictive, correlational design was used to apply the Theory of Reasoned Action by exploring predictive relationships among variables (e.g., commitment, confidence, and concern) and the covariates (e.g., ethnicity and gender) [22].

Participants

A convenience sample of 148 Master's level students attending accredited speech-language pathology training programs across the United States was utilized. This number accounts for those participants removed from the sample following data screening. Descriptive data for the participants (N=148) is presented in Table 1. A convenience sample was used due to availability [36-38]. Participants were recruited via email messages sent out to program directors of accredited programs throughout the United States. The possibility of snowball or chain sampling was also utilized. Participants were asked to complete an online survey. Participants were screened to verify their status as graduate students attending accredited programs; undergraduate students, nonstudents, and faculty/staff personnel were excluded. Demographic data were embedded in the context of the aforementioned survey.

In order for a regression analysis to provide valid and reliable results, the recommended sample size involving more than two predictor variables is $N > 104 + k$; where N is the number of cases and the predictor variables are referenced as (k). As this study involved three predictor variables and two covariates (demographics) (k), the minimum sample size suggested was $N > 109$. With an α level set at .05, a medium effect size set at ($f^2 = 0.15$) and power of 0.80, a priori calculation suggested a sample size of at least 76. "The higher the correlations among predictors, the larger the sample size that will be needed in order to obtain reasonable narrow confidence intervals for slope estimates".

Setting

After institutional IRB approval, a total of 257 program directors were contacted and asked to forward an explanatory email to their graduate students. The email included possible risks or benefits of the study, informed consent, and the link to the survey. The survey link remained active for approximately two weeks from the date of the initial email. Participants were able to access the survey and complete it at their leisure during the set timeframe. At the end of the two-week period, the survey was rendered inactive and no additional data was collected.

During the 2011-2012 academic years, there were approximately 14,038 speech-language pathology graduate students enrolled in accredited programs throughout the United States. The 14,038 students, 4.7% were male; 95.3% were female; 83.6% were white; and 14.3% were non-white, racial/ethnic groups. Approximately 148 graduate students completed the survey in its entirety representing 38 (14.7%) different programs and 24 (48%) different states. It is impossible to know exactly how many graduate students received the actual survey link.

The survey completed by the participants was hosted via Google Docs and was accessed via the participants' personal computer systems. The survey used was cross-sectional in nature and consistent with single stage sampling allowing data to be collected at one point in time as opposed to a longitudinal approach. Given the target sample

population was speech-language pathology graduate students; there was a high probability that by nature of their choice of profession, they likely perceived child maltreatment to be an important and worthwhile topic to be studied.

Variables	M/n (SD)
Gender (n%)	
Male	9 (6.0%)
Female	139 (94.9%)
Age (n%)	
Traditional (\leq 25 Years)	97 (65.5%)
Nontraditional (\geq 25 Years)	51 (34.4%)
Ethnicity (n%)	
White	124 (83.7%)
Non-White, Ethnic/Racial Group	24 (16.2%)
University Designation (n%)	
First-Year Graduate Student	58 (39.1%)
Second-Year Graduate Student	90 (60.8%)
Graduate Program Response Rate	38 (14.7%)
State Representation	48%

Table 1: Descriptive Statistics

Instrumentation

The survey developed for this study was comprised of three sections: a demographic section; an attitude measurement section examining the three predictors variables of commitment, confidence, and concern; and ten vignettes and ten images used assess reporting practices of graduate students. Previous studies investigating child maltreatment provided a Likert-type scale range from one-to-five. By increasing the scale by two range points, there is a greater likelihood variance between participants' scores will increase. The utility of an expanded Likert-type scale may also increase the instruments sensitivity. A review of the literature on the use of five, seven, and ten-point scales suggests that five and seven-point scales produced similar mean scores; use of a ten-point scale produced lower mean scores than the five and seven-point scales consistent with an approximate 0.3 difference ($p=0.04$) [39].

Predictor variables

The instrument used to measure the predictor variables of commitment, confidence, and concern for this study was based on a validated measure developed to assess teachers' attitudes toward child maltreatment centering on commitment, confidence, and concern, the Teacher Reporting Attitude Scale (TRAS). The TRAS is a 14-item instrument that has been used to assess teachers' attitudes toward reporting child abuse and neglect and assesses the dimensions of commitment, confidence, and concern. There are six items related to the attitude dimension of commitment, confidence includes three items, and concern includes five items. The TRAS was modified to reflect the sample population being studied, substituting educator(s) or

teacher(s) with speech-language pathologist(s). The rating scale provided was based on a seven point Likert-type scale with possible scores ranging from one (strongly disagree) to seven (strongly agree). Three example questions representing the three attitudinal dimensions included: commitment (e.g., Reporting child maltreatment is necessary for the safety of children); confidence (e.g., I believe the current system for reporting child maltreatment is effective in addressing the problem), and concern (e.g., Speech-Language Pathologists who report child maltreatment that is unsubstantiated can get into trouble). The original TRAS may be found in Appendix A. A modified version specific to the needs of this study and the population may be found in Appendix B [40-42].

The original TRAS exhibited good construct validity. Good internal reliability was noted for each of the aforementioned three dimensions. Cronbach's α was noted per the following: commitment (0.77), confidence (0.62), and concern (0.66). Cronbach's α for the scale in its entirety is (0.76), which is within the accepted threshold of 0.70 to 0.95 [40].

The Likert-type scores for each of the three dimensions of attitude were summed together per each category. Per the developers of TRAS, the lower the score, the greater the degree of likelihood the participant possesses the said dimension. Possible score ranges for each of the following dimensions include: commitment (0-42); confidence (0-21), and concern (0-35). The possible mean for the cumulative section could range from (0-32.6). For the purposes of this study, the Likert-type scale scores were reverse coded in order to facilitate consistency between the criterion and predictor variables. As such, a score of one is equivalent to strongly disagree; a score of seven is equivalent to strongly agree.

Criterion variable

The researchers developed an instrument that consisted of ten vignettes and ten images to assess the criterion variable of reporting behaviors. The ten vignettes were adapted from the work of all ten vignettes represented examples of the various types of child maltreatment. The rationale for the use of vignettes was that they may represent a more accurate perspective of participants' decisions rather than using their own accounts of their individual reporting practice patterns. One example vignette is provided in Appendix C. Images were also included and present a novel way of investigating reporting practices. Five of the images depicted child maltreatment while five presented as mimics of child maltreatment. One example image is provided in Appendix D [43-48].

Participants were asked to assess each vignette and image using a seven-point Likert-type scale with possible scores ranging from one (definitely would not report) to seven (definitely would report). Whereas the vignettes and images included both examples of child abuse/neglect and mimics of maltreatment, the criterion variable data was recoded using a binomial approach. If a participant assigned a score of seven (definitely would report) to a vignette or image that truly depicted child maltreatment, he/she received a score of one. If a participant assigned a different score, a zero was applied. This method followed suit for the other examples including those vignettes and images that served as foils. In total, 15 of the 20 vignettes and images depicted child maltreatment. As such, a completely accurate response value would have resulted in 15 Likert-style scores of seven (definitely would report). When recoded, the maximum number of possible scores of one should equal 15. Recoding the criterion variable to reflect scores of either one or zero allowed the researcher to simplify the

process of analysis. Moreover, recoding aided in gauging each participants' accuracy per their reporting practices.

Control and extraneous variables

The demographic section included both control and extraneous variables. Participants were requested to select the most appropriate answer from a list or type a response in an "other" category. This information was measured using nominal/categorical data. The control variables included participants' gender and ethnicity. The extraneous variables included participants' university designation (e.g., 1st year graduate student, faculty), the state (i.e., location) of his/her university, and their age classification (i.e., traditional or nontraditional student). The extraneous variables were included for both data screening and representative purposes.

This study involved one criterion variable (i.e., reporting practices), three predictor variables (i.e., commitment, confidence, and concern) and two covariates (i.e., ethnicity and gender). The data were organized into four blocks. Block one consisted of the covariates gender and ethnicity. Block two comprised both of the aforementioned covariates as well as the addition of the attitudinal factor of commitment. Blocks three and four contained the elements of block two with the addition of the factors of confidence and concern respectively. The data was analyzed using (SPSS) Version 22 including descriptive statistics and hierarchical multiple regression. An α level set at .05 was utilized.

Results

One hundred forty-eight completed surveys were returned. Approximately 94.9% (n=139) of respondents identified themselves as female and 6% (n=9) identified themselves as male. Among the participants 83.7% (n=124) identified themselves as white and 16.2% (n=24) identified themselves within the non-white-racial/ethnic group. These numbers are representative of graduate programs in the United States and are consistent with the Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) (2013) report.

Correlation of predictor variables and reporting practices

Table 2 presents the results of the correlation analyses, and in essence, aids in helping measure relationships between variables. There were weak, positive correlations between the attitudinal dimensions of (commitment) and (confidence) on graduate students' decisions to report suspected maltreatment ($r=0.341$, $p<0.001$) and ($r=0.266$, $p=0.001$) respectively. A weak-to-moderate positive association was noted between the attitudinal dimension of (concern) and the students' decision to report suspected maltreatment ($r=0.405$, $p<0.001$). There were weak positive associations present between the three attitudinal dimensions overall ($r=0.310$, $p<0.001$), ($r=0.339$, $p<0.001$), and ($r=0.345$, $p<0.001$). A statistically significant relationship was not apparent per the covariate of ethnicity on the reporting practices of the graduate students. Ethnicity, also did not evidence a statistically significant association with the attitudinal dimensions of commitment, confidence, and concern. A chi-square test of association was conducted between gender and reporting practices. There was a statistically significant association between gender and reporting practices, $\chi^2(15)=28.227$, $p=0.020$. Females are more likely than males to report child maltreatment.

Good internal reliability was present for two of the three attitudinal dimensions. Cronbach's α was noted per the following: commitment (0.72), confidence (0.46), and concern (0.77); Cronbach's α was 0.78 for

the composite score. These numbers are relatively consistent with Walsh et al. who reported internal reliability scores of commitment (0.77), confidence (0.62), concern (0.66), and the entire scale (0.76). Cronbach's α for the vignettes and images was 0.71, indicating good reliability.

	1	2	3	4	5
Reporting	-				
Ethnicity	-0.047	-			
Commitment	0.341**	0.029	-		
Confidence	0.266**	0.05	0.310**	-	
Concern	0.405**	-0.031	0.339**	.345**	-

Note: * $p \leq .05$, ** $p \leq .001$

Table 2: Correlation of Criterion and Predictor Variables

Four models were derived from the predictor and criterion variables. The models were hierarchically ordered based on logic and because the study focused on determining how each predictor variable or variables "adds to the (regression) equation at its own point of entry" [42]. Model one consisted of the covariates gender and ethnicity and was not significant, $F(2, 145)=1.438$, $p=0.24$. Model one accounted for 1.9% of the variance of reporting practices.

Model two comprised both of the aforementioned covariates as well as the addition of the attitudinal factor of commitment. Model two was significant, $F(3, 144)=8.649$, $p<0.001$, and accounted for 15.3% of the variance in reporting practices. The addition of the dimension of commitment to the model facilitated a 13.4% change in the variance of the full model from model one to model two, $\Delta R^2=0.133$, $p<0.001$. Per model two, gender and commitment were found to be individually influential on the reporting practices of students where $\beta=0.184$, $p=0.019$ and $\beta=0.369$, $p<0.001$, respectively. Females are more likely than males to report. As a student's level of commitment increases, so does the likelihood he or she will report suspected maltreatment. The covariate, ethnicity, was not statistically significant and did not individually contribute to the model.

Model three included ethnicity and gender as well as the attitudinal dimensions of commitment and confidence. Model three was significant, $F(4, 143)=7.598$, $p<0.001$, and accounted for 17.5% of the variance in reporting practices. The addition of the attitudinal dimension of confidence to the model explained an additional 2.2% of the variance over and above the two covariates and commitment ($\Delta R^2=0.023$, $p=0.050$). Per model three, gender, commitment, and confidence all individually contributed to the model; however, the contribution of commitment was the greatest where $\beta=0.317$, $p<0.001$. The contributions made by gender and confidence to the model were also statistically significant, where $\beta=0.166$, $p=0.035$ and $\beta=0.159$, $p=0.050$, respectively. Again, as with models one and two, the covariate ethnicity was not statistically significant and therefore did not contribute to the model. As a student's level of confidence and commitment increases, so does the likelihood he or she will report suspected maltreatment. Nonetheless, as with model two, females are more likely than males to report suspected maltreatment.

Model four (Table 3) retained the covariates ethnicity and gender as well as the attitudinal dimensions of commitment and confidence, while adding concern to the model. Table 3 represents all of the

predictor variables including the covariates. Model four was significant, $F(5, 142) = 9.121, p < 0.001$, and accounted for 24.3% of the variance in reporting practices. The addition of the attitudinal dimension of concern to the model explained an additional 6.8% of the variance over and above the two covariates and the two attitudinal dimensions of confidence and commitment ($\Delta R^2 = 0.068, p < 0.001$). Per model four, gender, commitment, and concern all individually contributed to the model; however, the contributions made by commitment and concern were the greatest where ($\beta = 0.240, p = 0.004$) and ($\beta = 0.288, p < 0.001$) respectively. In model four, the attitudinal dimension of confidence was not statistically significant, and therefore, did not individually contribute to the model. Additionally, secondary to its low reliability coefficient, any results related to the attitudinal dimension of confidence should be interpreted cautiously. In keeping with the aforementioned models one, two, and three, the covariate ethnicity did not contribute to the model in a meaningful way. Therefore, as a student's level of commitment and concern increase, so does the likelihood he or she will report suspected maltreatment. Again, females present as more likely than males to report suspected maltreatment.

Variable	B	SE	β	t	p
Gender	1.76	0.878	0.15	2.006	.047*
Ethnicity	-0.244	0.551	-0.033	-0.442	0.659
Commitment	0.335	0.113	0.24	2.968	.004*
Confidence	0.146	0.14	0.084	1.048	0.296
Concern	0.233	0.065	0.288	3.567	.001**

Note: * $p \leq 0.05$, ** $p \leq 0.001$, $\alpha = 0.05$

Table 3: Hierarchical Regression Model Four

Discussion

This study centered on examination of the relationships between the attitudinal factors of commitment, confidence, and concern toward child maltreatment and associated reporting practices; however, the paramount factor for consideration was aligned with choice. Choice corresponds with intentionality. As such, the ability to weigh evidence and arrive at a decision based on review of the data directly aligns with Ajzen and Fishbein's [22]. Theory of Reasoned Action (TRA). The theory posits that if an individual can be moved to intend to perform a behavior after considering attitudes, perceptions, and subjective norms, the likelihood is great, he or she will actually carry out the said behavior. The results of this study served to provide evidence that the theory held true when applied in this context and with this population. As the attitudinal dimensions of commitment and concern increase, so does the likelihood that students will report suspected maltreatment. Moreover, females are more likely to report suspected abuse and neglect than their male counterparts.

The results of this study were similar to those found in other studies likely due to the strong emotional connection, and thus, commitment, that speech-language pathologists have with the children they serve [7,24]. Previous research notes that both negative and positive attitudes toward reporting practices appear to influence an individual's behavior [24]. The likelihood is great that professional and graduate students in speech-language pathology share similar convictions to teachers and student teachers who view commitment as their professional

obligation to those they serve and is largely predicated on feelings of client safety and prevention. Moreover, an individual's level of knowledge about child abuse and neglect was also implicated including their beliefs and their own metacognitive analyses concerning their views on maltreatment [31]. Students' sense of commitment is linked directly to how they feel about child abuse and neglect as well as their pre-existing awareness of the issues surrounding maltreatment. These factors, coupled with a progressive understanding of professionalism, may explain why the attitudinal dimension of commitment was a statistically significant contributor to reporting practices.

Confidence is often tied to knowledge and also to a degree of faith in the law enforcement system to investigate alleged misacts. Confidence is informed by both practical and empirical data where reporting practices are concerned. Understanding that confidence is time and experience oriented may help explain why it did not individually significantly contribute to the final model and why the results of this study differed from Choo et al. and Walsh et al., who found confidence to be a significant factor. The dimension of confidence is largely tied to professional experience and on-the-job training. The study samples by Choo et al. and Walsh et al. used certified teachers with varied years of experience. This study used relatively inexperienced graduate students. The aforementioned outcome is not terribly surprising given most graduate students have never reported maltreatment and may not be aware of proper practices. This lack of interaction with authorities, coupled with a limited understanding of "the system's response to reporting and perceptions of the effectiveness of child protective systems' responses to their notifications," likely impacted this dimension overall.

Concern as it relates to attitudes towards child maltreatment appears aligned with an individual's emotional response. Concern about what may happen to the child as a result of reporting an alleged act is also a part of this attitudinal dimension. Students' sense of concern toward reporting was slightly heightened over commitment. This is consistent with previous research, wherein teachers with less experience also had significantly higher scores per the attitudinal dimension of concern. There is also a high probability that by nature of their choice of profession, students perceive child maltreatment to be an important and worthwhile issue. Moreover, their knowledge that this study sought to examine their reporting practices coupled with their self-driven need to achieve accuracy likely influenced their independent ratings. This too, is in some way tied to participants' affect and is also consistent with TRA.

An ongoing theme noted in the literature with regard to poor reporting practices crossing both the fields of education and medicine centers on poor preparation and decreased support. Feng, Huang, and Wang itemized the hindrances behind reporting practice issues to include individual characteristics, personal convictions, attitudes, levels of assuredness, and employer/community support. A lack of training regarding the signs of child maltreatment but also on how to best report alleged misacts from both academic (student) as well as occupational (professional) personnel, including students was also implicated. Moreover, reporting discrepancies of child abuse and neglect per physicians' practices were attributed to insufficient training during medical school and/or subsequent residency assignments [36-40].

As such, accredited speech-language pathology training programs in the United States, with support from ASHA, should continue to diversify student enrollment and realign their programs of studies (and standards) so that students are: knowledgeable of the signs/symptoms

of maltreatment, informed on how to report suspected maltreatment, and held accountable for failing to respond accordingly. The current study supports this change as the three attitudinal dimensions coupled with ethnicity and gender predict reporting behavior [41-43].

Limitations

A caveat highlighted in this study is the lack of equal gender representation. Historically, the predominance of females has been an ongoing issue for the field of speech-language pathology [44]. The male perspective on child maltreatment as it relates to students in speech-language pathology is limited. The female gender contribution to the regression equation was statistically significant for this study; however, this does not necessarily indicate that males are not committed, confident, or concerned about their attitudinal roles and responsibilities as student or professional speech-language pathologists. University training programs, as well as ASHA, should continue their efforts to promote a more balanced ratio of male to female speech-language pathologists as a whole. Nonetheless, there were not enough males in the sample to represent the full range of responses that might be possible with a larger sample size.

Limitations for any study should evidence review of both threats to internal and external validity. With regard to multiple regression analysis, there are five threats to internal validity that may be considered. These include: omitted variable bias, wrong functional form, errors-in-variables bias, sample selection bias, and simultaneous causality bias [45-47]. The nature of this study controls for all but two of the five threats to internal validity: omitted variable bias and sample selection bias.

Certainly with regard to external validity concerns, generalizability is limited given the fact that only a single population group was studied and that a significant gender bias was present. Conclusions related to gender in this model should be interpreted and applied with caution as the cell size for male participants, while reflective of the demographic breakdown in the field, was very small. Moreover, the likelihood the results will be applicable to other fields of study is debatable. One must also note that the focus of a correlational study centers on relationships and not causation thus suggesting further research is needed that is quasi-experimental in nature [49].

Conclusion

The intent of this study was to better understand the factors that predict reporting practices of students working toward graduate degrees in speech-language pathology. The researchers note that this study examined reporting practices of graduate students based on vignettes and images and are aware that individual experiences with clientele may be limited. Being an effective speech-language pathologist "requires an understanding of the myriad issues children face in navigating their multiple environments". One might suggest that this "understanding" is a career-long event. This study offered both theoretical and practical implications impacting university graduate training programs singularly but also the field of speech-language pathology collectively. The study highlighted the need for ongoing research into the arenas of child maltreatment, subsequent protective services, and the roles and responsibilities of professional speech-language pathologists, and graduate students. While the pervasiveness of child maltreatment is a global issue impacting both children with and without disabilities, it is the hope of these researchers that the scant knowledge base as it relates to the field of speech-language

pathology and child maltreatment has now been increased and the gap in the literature narrowed.

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