THINK OF THE CHILDREN: EVALUATING THE EFFICACY OF A CHILD MALTREATMENT EDUCATION PROGRAM

Amanda B. McElroy[1*], Michael R. Langlais[2]

[1]Greater Waco Early Education Center, Waco, Texas, United States
[2]Department of Human Sciences and Design, Baylor University, Waco, Texas, United States

Abstract
Data reveals that child abuse and neglect are common and prevalent in the U.S. Often, the individuals who report child abuse and neglect are early childhood education workers. However, research has shown that some teachers are hesitant about reporting child abuse and neglect sparking the need for more educational support for early childhood education workers. Using the visual, aural, read-write and kinesthetic (VARK) model as a conceptual paradigm, the goal of this study is to examine the effectiveness of a child maltreatment training program focused on early childhood educators' attitudes towards recognizing and reporting abuse. Quantitative data comes from early childhood education workers and undergraduate students in child and family studies (N=83) who completed a pre-test before completing the hypothesized program and then a post-test once the training was complete. Results revealed that participants reported significantly higher scores for likelihood of reporting abuse, level of confidence in recognizing abuse, level in confidence in knowing risk factors of abuse and neglect and level of confidence in definition of abuse. Implications for early childhood education are discussed.

Keywords
Child abuse, child neglect, early childhood education, training.

1. Introduction

Child maltreatment is a serious concern in the United States. Child maltreatment includes physical, sexual and emotional abuse and neglect, with the latter being the most common (Miller-Perrin & Perrin, 2013). According to the Centers for Disease and Control (2024), approximately 1 in 7 children have experienced child abuse and neglect in the past year. Over half of all substantiated cases of child maltreatment occur in children six years old and younger. Because of this, early childhood teachers are the frontline of defense against child maltreatment. Teachers have a baseline of behaviors from which to draw on when a child's behavior changes. Through regular and routine interactions, teachers learn family dynamics, values and cultures. Because of those routine interactions, teachers are likely the first to notice when something is not right. Many teachers are hesitant to report suspected child maltreatment because they don't understand their legal responsibility, are not confident in the system's response or have a concern about the consequences of making the report (Ayling *et al*., 2020). The goal of

---

[*]**Corresponding Author:** Amanda B. McElroy, e-mail: DrM@greaterwaco.org

this study is to examine the effectiveness of a child maltreatment training program focused on early childhood educators' attitudes towards recognizing and reporting abuse.

In addition to educating early childhood educators about the risk factors and signs of child maltreatment, this training addresses the main reasons research has found for why teachers report suspected abuse only to their supervisors, if at all. Although teachers have engaged in similar trainings in the past, many teachers still hesitate or fail to report suspicions of child maltreatment. Therefore, this training focused on educating early childhood educators on the risks and signs of child maltreatment, but also the best practices for reporting abuse. This training program is situated in the visual, aural, read/write and kinesthetic (VARK) learning theory (Leite *et al*., 2010). This theoretical approach, common in family life education, aims to address different learning styles to help promote retention. Educational tools that use the VARK model show better educational outcomes (Vasileva-Stojanovska *et al*., 2015) and better understanding of the material (Langlais, 2016; Leite *et al*., 2010). By providing and discussing models of how to report child maltreatment, early childhood educators will be more likely to report child maltreatment and feel more at ease in doing so. Thus, we hypothesize that participants in this child maltreatment training program will report more confidence in their ability to report child maltreatment.

Definition of Child Abuse and Neglect in the United States

Children experience the world through relationships. Healthy and positive child development requires safe, stable, loving and nurturing relationships on a long-term basis. The foundation of a child's development is built through those relationships. Once a foundation is built, it cannot be easily altered, if at all. Children need caring, responsive relationships that provide warm and reciprocated interactions. Unfortunately, the earliest years when a child needs the most reciprocation in warm and nurturing interactions are also the years when parents are likely to struggle the most, affecting their capacity for providing safe, stable, loving and nurturing relationships for their young children, in some cases resulting in abusive or neglectful behavior (Klika *et al*., 2022; Prenatal-to-3 Policy Impact Center, 2022).

Child maltreatment is an expansive term that encompasses every classification of child abuse and neglect. Based on federal guidelines, each state has determined its own definitions and classifications for child maltreatment (https://www.acf.hhs.gov/cb/data-research/child-maltreatment). For this study, child maltreatment is defined as nonaccidental physical abuse, emotional abuse, sexual abuse and neglect inflicted or allowed to be inflicted on a child by a caregiver. This definition is based on other studies exploring this concept (Laajaslo *et al*., 2023; https://www.acf.hhs.gov/cb/data-research/child-maltreatment). Maltreatment includes all forms of violence against children by an authority figure (Krug *et al*., 2002). The majority of child maltreatment cases have been found to occur in young children, meaning people younger than 18 years of age (Dahake *et al*., 2018).

Physical abuse is defined as nonaccidental use of physical force resulting in an injury inflicted or allowed to be inflicted on a child by a caregiver. Physical abuse can be caused by acts of force such as hitting, kicking, shaking, burning or other shows of force against a child (Fortson *et al*., 2016). Physical abuse also includes any act of exploitation.

Exploitation is defined as the "illegal or improper use of a child or of the resources of a child for monetary or personal benefit, profit or gain by an employee, volunteer or other individual working under the auspices of a facility or program" (TFC, 2024). An example of exploitation would be a caregiver appropriating funds the child earned and

spending the funds on things not related to the child's interests or care. Physical discipline of a child is not considered abuse providing it is reasonable and does not result in physical injury to the child (Child Welfare Information Gateway, 2023; Texas Health and Human Services, 2024). Many families utilize spanking as a form of punishment. According to federal and state definitions, spanking is not abuse if it does not result in an injury. However, if discipline such as spanking results in any form of injury, such as leaving cuts or bruises on the child, it is classified as abuse.

Substance abuse is considered to be an element of child maltreatment by many states (Child Welfare Information Gateway, 2023). For the purpose of this study, substance abuse is included as an element of physical abuse. Substance abuse is the use of a controlled substance in a manner that results in physical, mental or emotional injury to a child (TFC, 2024). Substance abuse may be inflicted by prenatal exposure, through manufacturing of methamphetamine in the presence of a child, by any form of distributing illegal substances to a child, exposing a child to secondhand contact with an illegal substance or through use of a controlled substance by a caregiver resulting in their inability to adequately provide care for a child (Child Welfare Information Gateway, 2023).

Emotional abuse is defined as behavior by a caregiver that adversely influences a child's emotional development and well-being and includes failure to make a reasonable effort to prevent such behavior. This definition is based on previous studies (Laajaslo *et al*., 2023; https://www.acf.hhs.gov/cb/data-research/child-maltreatment). Emotional abuse can include behaviors such as constant criticism, denigration, ridicule, threats, rejection, withholding love and support, as well as non-physical forms of hostile treatment (Fortson *et al*., 2016; Child Welfare Information Gateway, 2023). Some researchers assert that emotional abuse also includes inappropriate emotional responses from a caregiver, especially when involving inappropriate emotional behavior in patterns that can be considered typical of that child-caregiver relationship (Jaroenkajornkij *et al*., 2022). Other classifications of maltreatment are frequently present with emotional abuse (Laajaslo *et al*., 2023).

Sexual abuse is defined as any sexual act intended to arouse the abuser, particularly any act the child cannot understand or consent to and may be coerced rather than forced. This definition is also based on other research and state laws (TFC, 2024; https://www.acf.hhs.gov/cb/data-research/child-maltreatment). This includes sexual assault, indecency, failure to prevent sexual conduct harmful to a child, compelling or encouraging a child to engage in sexual conduct and/or involvement in the creation of child pornography or a sexual performance (Texas Health and Human Services, 2024). Sexual abuse also includes any involvement in the form of trafficking, taking any part of a sexual performance by a child and coercing a child to enter into marriage (TFC, 2024).

Neglect is the most common type of child maltreatment and is defined as the failure of a person responsible for a child's well-being to provide for the child's basic needs. This definition is also based on state laws and empirical research (Haworth *et al*., 2024; U.S. Department of Health and Human Services, 2023). Neglect is the decision to have a blatant disregard for the consequences a child will endure due to an act or a failure to act that results in physical, medical, emotional or educational harm (TFC, 2024). Physical neglect includes failing to provide food or shelter, appropriate clothing and unsanitary living conditions and unsanitary personal hygiene for child. Physical neglect also encompasses supervisory neglect. Supervisory neglect in its most severe form is abandonment (Jacobi *et al*., 2010). Abandonment occurs when the parents' whereabouts

are unknown, when a child is left alone and suffers acute harm or when a parent has failed to maintain contact or provide reasonable support for a specified period of time (Child Welfare Information Gateway, 2023). Supervisory neglect also occurs when a parent knowingly leaves their child in a situation where the child is at risk of harm, including when the parent believes the child to be or has stated the child is at risk of harm (U.S. Department of Health and Human Services, 2023). Medical neglect constitutes failing to seek, obtain or follow through with medical care for a child, which includes waiting to take a child to the doctor for an injury or refusing to take a child to the doctor when their school has expressed specific concern regarding a contagious disease (Haworth *et al*., 2024). Emotional neglect constitutes failing to provide adequate nurture and affection and inattention to a child's emotional needs (Child Welfare Information Gateway, 2023). Educational neglect constitutes failing to ensure a child attends an appropriate educational program (Massullo *et al*., 2023).

Program for Reporting the Maltreatment of Children

To best protect children from the dangers of neglect and abuse, an early childhood education training was created. This training encompasses definitions of child maltreatment including physical abuse, emotional abuse, sexual abuse and neglect. It addresses factors associated with a higher risk of child maltreatment and identifies specific signs of child maltreatment. This training also explains the legal requirements and ramifications for reporting suspected child maltreatment and describes the reporting procedures for individuals who notice signs and suspect child maltreatment is taking place. The conclusion of the content of this training is a discussion of the strategies for decreasing risks associated with child maltreatment and reviewing implications for teachers and educational leaders. This training stands apart from other trainings on child abuse for three reasons. First, this training addresses the empirically discovered reasons teachers fail to report suspected child maltreatment. Second, this training discusses real-life examples of suspected child maltreatment being reported and how the determination was reached as to whether the initial concern met the threshold for suspicion, making a report appropriate. Third, this training provides real and applicable implications for teachers and leaders regarding their duty to report suspected child abuse to the appropriate authorities and discusses teacher's ability to help children stay safe from child maltreatment by having the courage to be their voice.

This information is lacking in other programs, which may explain educational leaders' hesitancy regarding when and how to report suspected neglect (Ayling *et al*., 2020). The design of this training also utilized the visual-aural-reading-kinesthetic learning model (VARK; Leite *et al*., 2010). When examining how to create an effective online training, the VARK learning model was chosen because based on its three basic principles: that every individual is capable of learning and will retain information best when their learning modality strength is employed; that motivation levels in students increase when their learning modality preference is accommodated and that presenting new concepts within the context of the preferred mode of perception is a best practice for information retention (Allcock & Hulme, 2010). By engaging in different delivery methods through this learning, while also applying real world examples, individuals are more likely to retain content (Vasileva-Stojanovska *et al*., 2015). These modalities are considered by some researchers the keys to learning (Dunn, 1984). Given the uniqueness of this training, empirically and theoretically, we propose the following hypotheses:

Hypothesis 1: Participants will report more confidence in the reporting child maltreatment as a result of the training.

Hypothesis 2: Participants will be able to better define constructs associated with child maltreatment as a result of the training.

2. Materials and Methods

Procedures

Participants for this study were recruited from two sources: an undergraduate course in child and family studies at a midsize university in southern central United States and early child education workers at a large early education center in southern central United States. This multi-sample approach was used to help improve generalizability of the findings, increase the sample size and improve the diversity of participants. At the university, potential participants were recruited through a post in the learning management software (i.e., Canvas) in an introductory child and family sciences course, which is open to all majors, that stated the goal of the study, to evaluate a child abuse and neglect reporting training program, how to participate in the program and evaluation, the length of time this process took and remuneration, which was extra credit. Students exposed to the post were also given an alternative assignment for extra credit if they did not want to participate in this study. Of the 84 students presented with the study, 47 agreed to participate. Early child education workers were emailed information about the study from their supervisor, which stated the goal of the study and how to participate. For remuneration, workers would receive a certificate of completion for doing the training. For the 40 early childcare workers exposed to the study, 36 participated. This number of participants was above the minimum 36 participants, which was recommended using a G*Power analyses with power = .80, effect size = .50 and error probability = .05.

The training was virtual and asynchronous, so participants could complete it at a location and time that was convenient for them. They could also start and stop if needed. Before starting the virtual training, participants read an informed consent about the study. At the end of the consent form, a statement said, "If you proceed to the next page, you are consenting to participate in this study". In the consent form, participants were told about the nature of the training and that difficult and potentially triggering topics would be discussed, including child abuse and neglect. If participants were feeling distressed, they could reach out to one of the principal investigators accordingly. However, none reported distress as a result of participating in this training. All aspects of this study were approved by the appropriate institutional review board.

Participants

Participants for this study were undergraduate students in a child and family study class from a midsize university or early education workers, both located in central Texas (N = 83). Approximately 69% of participants were recruited in undergraduate courses, and the rest were recruited from the early childcare center associated with this study; it should be noted that some of the early childcare workers were also undergraduate students but were not recruited through the undergraduate course associated with recruitment for this study. Of the 83 participants, 79 identified as female and four identified as male (none of the childcare workers identified as male). There was a significant difference in age between the two samples, with the undergraduate students recruited being significantly younger (M = 20.02, SD = .97) than the early childcare workers (M = 27.02, SD = 4.55).

No other demographic information was collected from participants beyond gender and age.

Measures

Although scales exist that capture attitudes towards a program as well as measures that help delineate the effectiveness of a program, these scales were not specific to programs that seek to educate viewers on how to properly report the maltreatment of children. Since this aspect of the program is what makes the training unique, in addition to using the VARK model as a theoretical foundation, the principal investigators created their own pre- and post-test questions to capture the effectiveness of the child maltreatment program. The pre-test questions included: "How likely are you to report abuse to a supervisor?", "How likely are you to report abuse directly to an abuse hotline?", "How confident are you in your ability to recognize signs of abuse and neglect?", "How confident are you in your knowledge of the risk factors of abuse and neglect?" and "How confident are you in your definition of child abuse and neglect?". The scale for the first two questions was 1 (unlikely) to 5 (very likely) and the scale for the other three questions was 1 (not at all) to 7 (very). These five questions were selected in order to be concise and specific towards this particular training; this number of questions is consistent with the recommendations for pre-post-test designs (Davis *et al.*, 2017). Additionally, these five questions were derived from other studies that evaluated early childhood education programs (Bullinger *et al.*, 2022). Participants were also told to provide their definition of child abuse and neglect, their perceptions of risk factors associated with abuse and neglect and what they perceived as signs of child abuse and neglect. For the post-test, participants answered these same questions, but the stem, "After participating in this training" was added to each question. The scale options were the same as the pre-test. Participants also provided their definition of child abuse and neglect, the risk factors of child abuse and neglect and signs of child abuse and neglect after completing the training. These questions were asked to ensure retention of material as a potential proxy measure of program effectiveness.

Data Analysis

This quantitative study used a pre-post-test design. Therefore, paired samples t-tests were used to test the first hypothesis of this study. Given the exploratory nature of the study, Bonferroni corrections were applied ($p < .005$). The five questions concerning reporting abuse and confidence in knowledge were included as paired data in this analysis. Differences in participant responses to the difference in definitions was captured by percent consistency with the information that was shared in the training using ChatGPT. More specifically, a prompt was entered into ChatGPT to determine how much the definitions compared to the definitions provided in the training on a scale of 0-100% consistency. Both the pre-test and post-test definitions of abuse and neglect and the risk factors of abuse and neglect were entered in comparison to the information presented in the training (which was based on empirical data, as discussed in the literature review). These data e definitions were then verified by the Principal Investigators to ensure quality in the definitions.

3. Results

Results for the first hypothesis are presented in Table 1. According to this analysis, participants reported significantly more confidence in their ability to recognize signs of abuse and neglect, more confidence of the risk factors of abuse and neglect and more

confidence in their definition of child abuse and neglect from pre-test to post-test. Additionally, participants were more likely to report the abuse to the child abuse hotline in the post-test compared to the pre-test. However, there were no significant differences between the pre-test and post-test concerning whether participants would report the abuse to their supervisor.

Table 1. Paired-samples t-test for effectiveness of child maltreatment education program (N = 87).

	Pre-test	Post-test	t
How confident are you in your ability to recognize signs of abuse and neglect?	5.02 (.133)	6.44 (.77)	-7.79*
How confident are you in your knowledge of the risk factors of abuse and neglect?	4.95 (1.49)	6.49 (.72)	-9.40*
How confident are you in your definition of child abuse and neglect?	5.09 (1.32)	6.67 (.60)	-9.20*
How likely are you to report abuse directly to the hotline?	4.01 (.99)	4.75 (.52)	-10.52*
How likely are you to report abuse to your supervisor?	4.68 (.63)	4.86 (.68)	-1.93

Note. Responses ranged from 1 to 7 for the first three questions and 1 to 5 for the last two questions
* p< .00069 per Bonferroni correction

Next, participants provided a response to open-ended questions regarding what they believed child abuse and neglect was, the risk factors of abuse and signs of abuse and neglect. Comparing the pre-test definitions to the post-test definitions, participants used more words in their definitions, t(86)=2.45, p < .01. However, length of a response does not signal accuracy. Using ChatGPT, we compared pre-test definitions to post-test definitions to determine which was more accurately representative of 1) the definition of abuse, 2) the risk factors of abuse and 3) the signs of abuse. Results revealed that the post-test was more closely aligned with the proper definition of abuse and neglect in 96.0% of the responses and 90.9% of the responses for the risk factors and signs of abuse aligned with the information from the pre-test. This information improved from less than 50% for this information in the pre-test. As a post-hoc analysis, participants were also given the opportunity to provide their opinions about the training, which were completely anonymous to the research team. Based on content analysis performed by the principal investigators, 57 of the 61 participants who answered the question reported that the training was beneficial. One participant said that the training was not helpful and the other three had mentioned that they had already known this material before engaging in the training. An example response from a participant included, "I ABSOLUTELY WOULD RECOMMEND, I've taken other course of child neglect/abuse for my job and they were way more general and did not really strengthen my understanding".

4. Discussion

The goal of this study was to develop and determine the effectiveness of a child maltreatment training program focused on early childhood educators' attitudes towards recognizing and reporting abuse. This training is different from past training as it provides more up-to-date standards on reporting practices that goes beyond center-based obligations. Based on participant responses, many believed that the training was effective

and indicated that they had confidence in how to report the maltreatment of children in the future. Findings also showed that the training appeared effective in educating participants on the definitions of abuse and neglect, the risk factors of abuse and neglect and the signs of childhood abuse and neglect, although longitudinal analyses are needed to determine how long information is retained from this training once it is complete. These findings provide implications that are useful for early childhood educators.

The results reveal that this training was perceived as helpful by college students and early childhood education workers. The training differed from the average child abuse training available by introducing discussion on why teachers fail to report suspected child maltreatment to the state as these teachers are more comfortable only reporting their suspicions to their supervisors. By introducing authentic scenarios and discussing how they impacted the children and family the training addressed calls to improve reporting child abuse in early childcare settings and to make these rules more clear in order to prevent the maltreatment of children from happening again in the future (Ayling *et al.*, 2020). This training was likely effective as it was based on the premise of the VARK model (Leite *et al.*, 2010), which illustrates better retention in the short- and long term (Dunn, 1984; Vasileva-Stojanovska *et al.*, 2015). This training provides visual stimulation by providing a PowerPoint with key points and related pictures. Aural stimulation is provided by requiring students to listen to the script. The training provides read stimulation through intentionally placed discussion question assignments and it provides kinesthetic stimulation through the same discussion assignments and the act of writing out essay answers. Although the VARK model was not directly tested in this study, the qualitative findings showed that participants liked elements of the training that represented visual, aural, reading and kinesthetic learning. Retrospectively, based on the participant's post-training quiz answers, this training could be improved by incorporating more interactive components and more imagery, which could improve comprehension and participation for visual learners, Areas that were reported by participants as helpful were the required timeframe for making a report, the discussion assignments, the real-world examples, the clear and thorough definitions of all types of child maltreatment, a deeper understanding that teachers are also mandatory reporters and can face repercussions for failing to report suspicions and the implications both positive and negative for reporting suspected child maltreatment. These parts of the program highlight one or multiple learning styles based on the VARK model.

The training was also helpful because it was based on empirical data. Some trainings rely on anecdotal or idiosyncratic experiences, such as opinion and experience. Although individual experiences can be valuable, training should also incorporate empirical research, statistical data and the most up-to-date information on policies and laws associated with the maltreatment of children. Using empirical data and anecdotal evidence, many participants reported that the training is effective in educating others about the best practices regarding reporting abuse and neglect, choosing to report and failing to report suspected child maltreatment. This finding is supported by the empirical results of this study that showed how much participants gained from participating in the training and how detailed their discussions were regarding abuse that were provided in the post-test.

Implications for Early Childcare Teachers

Early childhood teachers are often the first individuals who notice and recognize signs of child maltreatment (https://www.acf.hhs.gov/cb/data-research/child-maltreatment; Texas Department of Family and Protective Services [TX DFPS], 2024).

Teachers often know what behaviors to look for when suspecting abuse, often focusing on significant acute changes in behavior. Regardless, many teachers hesitate to report suspected maltreatment of children. Some teachers fail to report suspected maltreatment because they fail to understand their legal responsibility (Ayling *et al*., 2020). The legal responsibility for an early childhood teacher is to report any suspected maltreatment of children within 48 hours of the first suspicion. Many institutions have policies that require teachers to share their suspicions with a supervisor. This reporting dynamic does not remove the teacher's legal responsibility to also make a report. Failure to make a report may result in criminal charges (TFC, 2024). These aspects of reporting the maltreatment of children are often missing in early childcare training.

Researchers have found that most early childhood teachers would make a report to their supervisor but not directly to U.S. Department of Family and Protective Services (Dinehart & Kenny, 2015). Unfortunately, reporting suspected maltreatment of children to a supervisor does not guarantee that a report will be made. This approach_also represents a diffusion of responsibility. Many early childhood teachers believe the center director is responsible for reporting suspected abuse. However, U.S. law states that every individual who suspects that the maltreatment of children is occurring is responsible to make a report. Thus, reporting suspicions to an administrator is not sufficient. This training highlights this responsibility and participants described that they understood the importance of making a report and the risk of diffusion if a supervisor fails to make a report, again advancing on previous trainings associated with the maltreatment of children.

Some teachers fail to report suspected maltreatment of children because they lack confidence in the system's response to the report. Prior experiences can sway teachers away from believing the report will be helpful. Nonetheless, the legal requirement remains unchanged. Some teachers are concerned with the consequences of making a report of suspected child maltreatment (Ayling *et al*., 2020). Teachers don't want to disrupt families and fear doing so over an inaccurate interpretation of a situation (Dinehart & Kenny, 2015). These concerns are echoed in the training in ways that address different learning styles. Understanding these implications and retaining this information will increase the precision of child maltreatment reports. Results of this study revealed participants confidence in reporting by understanding this process and the ramifications for not following through with their responsibility to report maltreatment to all responsible parties.

Implications for Leaders

Early childhood education leaders must support their teachers as mandatory reporters. If a teacher reports suspicions of child maltreatment, it is the responsibility of the leader to advise the teacher to make an official report. One of the roles of a leader in early childhood is to help teachers determine if there should be a suspicion of maltreatment of children. This situation can be difficult as each child and situation is unique. Based on the risks and signs present in the situation, the leader must take assertive action in encouraging their teacher to make a report and to make a report themselves if the determination is that child maltreatment may be present. This training describes these variables and factors in a way that participants retain the information, which would be helpful for leaders in early childhood education.

In the training, an example of misreporting that involved a leader in the training included: A director once shared that she had a teacher who brought a suspicion of child maltreatment to her attention. The director did not believe the suspicion was sufficient to

warrant a report and so the director did not make an official report over the teacher's suspicions. However, the teacher who was more familiar with the child and her family dynamic felt that her suspicions warranted a report. The teacher proceeded to make a direct report to TX DFPS. During the course of the child protective services investigation, the suspicions of child maltreatment were substantiated. The child was indeed being both abused and neglected at home. The teacher's report put authorities in a position to intervene and help both the child and the family. The leader, who was less aware of the family, would have made a decision that could have serious consequences for the child. This example was presented using central tenets of the VARK model, which increased the likelihood of the information being retained. This example also illustrates the importance of the process of reporting child maltreatment and the risks of abuse not being reported, which participants positively reinforced through their open-ended comments about the training.

It is crucial that leaders encourage and support their teachers in making reports to TX DFPS and similar organizations for suspected abuse. Early childhood professionals are the frontline of defense and research has shown that teachers, those most likely to identify the signs of maltreatment, are the most hesitant to make reports (Ayling *et al*., 2020). Leaders in early childhood must educate and facilitate their teachers in not only fulfilling their legal responsibilities, but in doing the right thing for the sake of the children for whom they provide care. Another role of the leader is to ensure that the maltreatment of children does not happen at the hands of an early childhood teacher (Crosson-Tower, 2003). Many individuals are not educated in the specifics of what constitutes maltreatment of children and may be relying on their own upbringing and background to guide them in appropriate behavior. Thus, this training provides this information, which again, is supported by participants responses to post-test questions. Within the context of early childhood, there are many behaviors that may not be deemed child maltreatment by a parent in their home but are considered inappropriate disciplinary behaviors in an education setting. There have been incidents recorded in educational programs of teachers using disciplinary methods that are, in fact, defined as physical abuse (TFC, 2024; https://www.acf.hhs.gov/cb/data-research/child-maltreatment). For example, at a childcare center, teachers brought water bottles to the classrooms and would spray the children for misbehavior (Texas Health and Human Services, 2024). While appropriate in many households for training cats, spraying children with water bottles is considered waterboarding and is not an acceptable behavior under any circumstance (Miller-Perrin & Perrin, 2013). Another example came from a childcare center where a teacher strapped a 3-year-old into a high-chair throughout the day when she would become too active for the teachers to handle, and when they didn't know how to redirect her rambunctious behavior. Restraining a child for disciplinary purposes is also abuse (Massullo *et al*., 2023). These examples are not esoteric - they happen in many areas. Without the proper education on child maltreatment for leaders and teachers, more child maltreatment could occur in early childhood education.

Based on the results of this training, the next steps regarding training for early childhood educators is to produce the same quality and design training for the topics required to be completed annually. These topics include, but are not limited to, child development, ages and stages, infant development, sudden infant death syndrome, interactions with children, supervision of children, building relationships with children, fostering self-esteem and emergency procedures. Additionally, there is a need for more high-quality Child Development Associate (CDA) training. CDA training encompasses

thirteen core competencies related to early childhood care and once completed is the equivalent of a one-year degree. It is predicted that an increase in early childhood educators receiving CDA training will also see an increase in program quality and teacher efficacy. By creating future educational tools using the VARK model with real world examples, it is possible to enhance the experience of children in early childcare by addressing child maltreatment as soon it is suspected by understanding what abuse is, the risk factors for abuse and how to report it.

5. Conclusion and Limitations

The goal of this study was to develop, implement and evaluate a childhood education program that can educate others, particularly those involved in early childhood education, on how to recognize and report the maltreatment of children. Although the majority of participants reported gains from this training, this study is not without its limitations. First, the participants in this study were recruited from the same county in the southern central U.S., restricting generalizability of the sample. Additionally, the pre-test and post-test measures were developed specifically for this study. Future investigations should identify or create more precise measures to determine the effectiveness of the training materials as well as measure the variance with the different learning styles, as tenets of the VARK model were not directly evaluated with this study. It would also be worthwhile to record which learning styles participants had to determine if learning style is a covariate associated with this study. For instance, the training may be more effective for a specific learning style and less effective for a different learning style. Without capturing this information, this information remains unknown. Additionally, to understand retention of the material, participants should be followed up after a period of time, such as six months, to determine how much information they retained in order to measure long-term retention, as opposed to short-term retention that was captured in this study.

Besides these limitations, this study evaluated a training program that extends content from previous trainings. Not only was this training theoretically supported by applying tenets of the VARK learning model, but it addressed topics that were not integrated in other trainings, using empirical data and real-world examples. Through this training, participants were more likely to feel confident in their understand of what the maltreatment of children is, how to recognize the signs of child abuse and neglect and what to do to make a report to ensure that a report is made, particularly in early childhood education settings. Through this training, it is possible to reduce the risk of the maltreatment of children and increase reporting accuracy. Future studies should examine other training materials to best assist families, teachers and leaders in early childhood education.

Institutional Review Board Statement

The study was conducted in accordance with the Declaration of Helsinki and approved by the Institutional Review Board of Baylor University (protocol code 2158089-1 and February 6, 2024).

Acknowledgments

References

Allcock, S.J., Hulme, J. A. (2010). Learning styles in the classroom: Educational benefit or planning exercise? *Psychology Teaching Review*, 16, 67-79.

Ayling, N.J., Walsh, K. & Williams, K.E. (2020). Factors influencing early childhood education and care educators' reporting of child abuse and neglect. *Australasian Journal of Early Childhood, 45*(1), 95-108. https://doi.org/10.1177/1836939119885307

Bullinger, L.R., Marcus, S., Reuben, K., Whitaker, D. & Self-Brown, S. (2022). Evaluating child maltreatment and family violence risk during the COVID-19 Pandemic: Using a telehealth home visiting program as a conduit to families. *Infant Mental Health Journal*, *43*(1), 143-158. https://doi.org/10.1002/imhj.21968

Centers for Disease and Control. (2024). About child abuse and neglect. https://www.cdc.gov/child-abuse-neglect/about/index.html

Child Welfare Information Gateway. (2023). Mandatory reporting of child abuse and neglect. U.S. Department of Health and Human Services, Administration for Children and Families, Children's Bureau. https://www.childwelfare.gov/topics/systemwide/laws-policies/statutes/reporting/

Crosson-Tower, C. (2003). The role of educators in preventing and responding to child abuse and neglect. U.S. Department of Health and Human Services. https://www.icmec.org/wp-content/uploads/2015/10/Role-of-Educators-Prevention-Booklet-US.pdf

Dahake, P. T., Kale, Y., Dadpe, M., Kendre, S. Shep, S., & Dhore, S. (2018). Impact of child abuse & neglect on children: A literature review article. *MIDSR Journal of Dental Research, 1*(1), 36-49.

Davis, G.C., Baral, B., Strayer, T. & Serrano, E.L. (2017). Using pre- and post-survey instruments in interventions: Determining the random response benchmark and its implications for measuring effectiveness. *Public Health Nutrition, 21*(6), 1043-1047. https://doi.org/10.1017/S1368980017003639

Dinehart, L., Kenny, M.C. (2015). Knowledge of child abuse and reporting practices among early care and education providers. *Journal of Research in Childhood Education, 29*(4), 429-443. https://doi.org/10.1080/02568543.2015.1073818

Dunn, R. (1984). Learning style: State of the science. *Theory into Practice, 23*(1), 10-19. https://doi.org/10.1080/00405848409543084

Fortson, B.L., Klevens, J., Merrick, M.T., Gilbert, L.K. & Alexander, S.P. (2016). *Preventing Child Abuse and Neglect: A Technical Package for Policy, Norm and Programmatic Activities*. Division of Violence Prevention, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.

Haworth, S., Schaub, J., Kidney, E. & Montgomery, P. (2024). A systematic review of measures of child neglect. *Research on Social Work Practice, 34*(1), 17-40. https://doi.org/10.1177/10497315221138066

Jaroenkajornkij, N., Lev-Wiesel, R. & Binson, B. (2022). Use of self-figure drawing as an assessment tool for child abuse: Differentiating between sexual, physical and emotional abuse. *Children (Basel), 9*(6), 868. https://doi.org/10.3390/children9060868

Klika, J.B., Maguire-Jack, K., Feely, M., Schneider, W., Pace, G. T., Rostad, W., … & Merrick, M.T. (2022). Childcare subsidy enrollment income generosity and child maltreatment. *Children (Basel), 10*(1), 64. https://doi.org/10.3390/children10010064

Krug, E.G., Mercy, J.A., Dahlberg, L.L. & Zwi, A.B. (2002). The world report on violence and health. *The Lancet (British Edition), 360*(9339), 1083-1088. https://doi.org/10.1016/S0140-6736(02)11133-0

Laajasalo, T., Cowley, L.E., Otterman, G., Lamela, D., Rodrigues, L.B., Jud, A., … & Nurmatov, U. (2023). Current issues and challenges in the definition and operationalization of child maltreatment: A scoping review. *Child Abuse & Neglect*, 140, 106187-106187. https://doi.org/10.1016/j.chiabu.2023.106187

Langlais, M.R. (2016). Accommodating different learning styles using YouTube: An approach to helping students understand ecological systems theory. *Family Science Review*, 21, 1-8.

Leite, W.L., Svinicki, M. & Shi, Y. (2010). Attempted validation of the scores of the VARK: learning styles inventory with multitrait–multimethod confirmatory factor analysis models. *Educational and Psychological Measurement, 70*(2), 323-339. https://doi.org/10.1177/0013164409344507

Massullo, C., De Rossi, E., Carbone, G.A., Imperatori, C., Ardito, R.B., Adenzato, M. & Farina, B. (2023). Child maltreatment, abuse and neglect: An umbrella review of their prevalence and definitions. *Clinical Neuropsychiatry, 20*(2), 72-99. https://doi.org/10.36131/cnfioritieditore20230201

Miller-Perrin, C.L., Perrin, R.D. (2013). *Child Maltreatment: An Introduction*, third edition. Sage Publications.

Prenatal-to-3 Policy Impact Center. (2024). How do we track state-level indicators of child and family wellbeing? Child & Family Research Partnership. The University of Texas at Austin LBJ School of Public Affairs.

Texas Department of Family and Protective Services. (2024). *Texas Department of Family and Protective Services*. Retrieved from https://www.dfps.texas.gov/.

Texas Family Code (TFC). (2024). Family Code-Chapter 261: Investigation of report of child abuse or neglect. https://statutes.capitol.texas.gov/Docs/FA/htm/FA.261.htm

Texas Health and Human Services. (2024). Minimum Standards for Child-Care Centers. State Department of Public Welfare.

U.S. Department of Health & Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2023). Child Maltreatment 2021. https://www.acf.hhs.gov/cb/data-research/child-maltreatment

Vasileva-Stojanovska, T., Malinovski, T., Vasileva, M., Jovevski, D. & Trajkovik, V. (2015). Impact of satisfaction, personality and learning style on educational outcomes in a blended learning environment. *Learning and Individual Differences*, 38, 127–135. https://doi.org/10.1016/j.lindif.2015.01.018

Yavar, N.G. (2024). Russia and Azerbaijan: Aspects of cooperation in the field of education. *Revista Conrado, 20*(96), 602-609.