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FUTURE DIRECTIONS

Future Directions in Child Maltreatment Research

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ABSTRACT

Child maltreatment (or child abuse and neglect) is a common area of interest in clinical child psychology. Research has examined the causes and consequences as well as the myriad risk factors and interventions that are effective in supporting child maltreatment victims and families. Child maltreatment is unique, however, from the study of disorders and even other kinds of adversity in that the scientific interest is shared across many disciplines including but not limited to, social welfare, medicine, law, and biology. As a result, the current state of the field although robust, is limited by a lack of shared definitions, common approaches to research and inclusion of widely differing sample types making the results often nonreproducible and of limited generalizability. The goal of the current paper is to provide clinical child and adolescent psychologists a guide to the complexity of child maltreatment research and to suggest possible solutions to navigate the challenges associated with research on child maltreatment. The manuscript provides suggestions that researchers could follow to ensure that mistakes from the past are not repeated and so that clinical psychology can contribute to the field with the most robust research for this significantly important public health issue.

"*Child maltreatment is a significant public health problem*." This sentence is the start of most published research on child maltreatment or child abuse and neglect over the past 50 or more years. The idea that accidently or intentionally failing to provide basic care and abstain from physically, emotionally, or sexually hurting a child has been a concern for society for a long time. From a science perspective, it was not until the 1962 landmark paper, titled "The Battered-Child Syndrome," published in the *Journal of the American Medical Association* that child maltreatment became a topic of discussion in the scientific community. The lead author, pediatrician Dr Henry Kempe, presented two children with head injuries and unexplained fractures, speculating the injuries were nonaccidental and the children had suffered abuse by their caregivers. Perhaps surprisingly, responses were mixed, with some professionals praising the article for exposing the realities of abuse, whereas others criticized the suggestion that parents were capable of intentionally harming their own children. Within 10 years of the Kempe article, all 50 states had statues known as "mandatory reporting" laws that require some professionals (e.g., teachers, psychologists, doctors) to report suspected child abuse to state child protective services agencies or other proper authorities (Kempe et al., 1962).

As a result of mandatory reporting and the development of statewide surveillance systems, it became clear that the prevalence of child abuse was increasing and that the mental health costs associated with child abuse were exponentially rising. In response, in 1974 the US government passed the Child Abuse Prevention and Treatment Act (CAPTA). This law created a federal definition of child maltreatment and financial support for states to assess, investigate, treat, prosecute, and develop prevention programs for child abuse. By funding assessment and intervention efforts, CAPTA also provided an opportunity for educators and scientists to conduct research and provide rigorous science study to the experience and nature of child abuse.

The result of these efforts has meant a significant body of work in clinical psychology that has included a focus on the mental, social, emotional, and behavioral health outcomes that result from child maltreatment as well as the predictors of abusive behavior by perpetrators. Moreover, the field has developed evidence-based intervention programs that work both to prevent and treat the nonphysical repercussions from exposure to child maltreatment. The work has moved from a focus on the child, to a focus on the family and the surrounding environment, understanding that the child's well-being is not simply a function of an abuse event and is greatly dependent on what other traumas and chronic

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adversities the family and larger community are managing.

For more than 50 years, hundreds of studies on child maltreatment have been published from a range of professional disciplines devoted to understanding the causes, consequences and contributing factors that continue to make child maltreatment a common problem. Despite this work, child maltreatment continues to be an ever present part of childhood for over three million youths in the US every year (Child Welfare Information Gateway, 2022). It is possible the lack of efficiency in the research to practice pipeline is due to the lack of clarity on the next steps that researchers should take when studying child maltreatment. The terms child maltreatment and child abuse are considered to be the same construct with the former being the most current way to refer to what was previously deemed child abuse and neglect. The purpose of the present article is to identify some of the needed next steps for child maltreatment science so that researchers in the next generation may focus their work to make the knowledge base on child maltreatment as useful as possible in eliminating this long-standing problem.

Overview of the Challenges to Progress

The idea that child maltreatment is a focus and of great interest for public health and clinical child and adolescent psychology is not hard to understand. The reasons, however, for why the science of child maltreatment research is slow are uniquely complex. Unlike mental health disorders, child maltreatment has many definitions, many interested disciplines and parties, from legislators to clinicians to parents, as well as a myriad of methods and approaches to research in child maltreatment. Unlike many other public health issues, child maltreatment science is associated with efforts in a wide breadth of professional disciplines primarily clinical psychology, sociology, social welfare, medicine, human development, law, and biology. The work of these fields has examined an equally wide array of issues including, but not limited to, mental and physical health, implementation of services, ethical approaches to research, forensic science and assessment, public health, child welfare and foster care, legal and court intervention, and neurobiology (Gilbert et al., 2009). Each of these fields has its own specific focus and approach to the cause and consequences of child maltreatment, and as a result, the field of child maltreatment science is fairly siloed. Each discipline has its own theoretical take on child maltreatment and rarely do these fields overlap or share findings, thus contributing to a "reinventing the wheel" problem. Moreover, child maltreatment research has a significant reproducibility problem in that most samples are unique (e.g., foster youth from different states, youth at risk for child maltreatment, children with a history of child maltreatment, adults who were victims of abuse as a child) and therefore finding consistent evidence of any consistent processes or outcomes can be almost impossible.

Child maltreatment is also unique in that the study of the experience is fraught with ethical and practical limitations not common to other issues. For example, access to youths known to be exposed to child maltreatment (e.g., youths in foster care) is often very hard to acquire, requiring many levels of state and local authorities to approve any study and even then, often limiting access to what is legally confidential information (e.g., state case file). Moreover, asking youths if they have experienced child maltreatment creates a significant problem for most institutional review boards and research labs as any affirmative response to questions about abuse requires contacting local social service authorities and law enforcement. From just a few examples, it is clear that the study of child maltreatment is not for the easygoing researcher as access and research methods commonly used for clinical populations of youth simply are much more complicated if one intends to study child maltreatment.

Even within the study of adversity and trauma exposure (i.e., natural disasters, community violence) more generally, the study of child maltreatment is often challenged by societal taboos associated with child maltreatment. Unlike other trauma exposures (e.g., natural disasters, community violence), being a victim of child maltreatment often comes with a specific kind of stigma, making most victims not perhaps as willing to share details of their experience. Moreover, given that child maltreatment most often occurs within families, asking caretakers to discuss their role, either directly or indirectly, of a child's exposure to maltreatment is also a challenge to both participant comfort and data accuracy. Although the picture painted thus far may seem dire for the field of child maltreatment science, although not exhaustive, the challenges can be summed up in four basic areas. By highlighting possible problems, suggestions for managing those challenges and moving the field forward is possible.

Challenges in Child Maltreatment Research and Possible Solutions

One: Lack of Consistent Definitions

Child maltreatment, unlike other adversity types or health concerns, gets its definition most commonly

from the state and federal law and not psychological science. According to the law in most states, child maltreatment refers to any 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, or an act or failure to act, which presents and imminent risk of serious harm to a child. Child maltreatment can take many forms in scientific study, but most researchers in the field recognize four types, neglect, physical abuse, psychological maltreatment, and sexual abuse. Each type can occur in isolation or in combination with other types (e.g., physical abuse and neglect) and most recent statistics suggest multiple types of exposure (e.g., polyvictimization) are the norm rather than the exception for most victims (Finkelhor et al., 2009).

Child maltreatment is distinctive from other potentially traumatic events in that it is also defined by federal law, The Child Abuse Prevention and Treatment Act (CAPTA, P.L. 100–294) amended in 2010 as the CAPTA Reauthorization Act of 2010 (P.L. 111–320), which stipulates that data be collected on the prevalence and incidence of maltreatment from every state on the rate and nature of child maltreatment across the country. The data from this effort is contained in a database, the National Child Abuse and Neglect Data System (NCANDS) and is collected by the Children's Bureau in the Administration on Children, Youth and Families, Administration for Children and Families, US Department of Health and Human Services. According to a recent report, in fiscal year 2017, 3.4 million children were the subject of a child maltreatment investigation, with 678,000 identified as victims of abuse. The significant difference between the number of reports and the number of substantiated victims is due to several factors: (1) the reported behavior or injury is not sufficient to constitute abuse in a given jurisdiction, or (2), there is insufficient information about the nature of the possible abuse to confirm that it happened. Subsequently, the problem for the field of child maltreatment science is to determine who should be in a given study sample – those suspected of abuse or only those were abuse is confirmed is a common dilemma. The makeup of a sample is not a small issue, yet there are no rules that govern who can and cannot be considered a victim of abuse. The rules of evidence are harder to document for some forms of abuse and nature of the evidence may be incomplete even when abuse has occurred.

Unlike a behavioral disorder where there are often multiple reporters available to interview, evidence for child maltreatment is not always easy to gather. Given the legal ramifications of child maltreatment for the perpetrator and the risk of being removed from one's home, a youth and parent/caretaker report may not always be consistent or complete. Moreover, sexual or physical harm to the child may not be evident to independent observers given that it is common for perpetrators and victims to hide abuse behavior and injury from authorities. Psychological or emotional abuse (e.g., belittling, overt criticism) is also hard to measure as one would be required to witness the interaction between caretaker and child. According to the Department of Health and Human Services, in fiscal year 2021, neglect was the most common form of abuse, identified in 70% of child maltreatment referrals, is defined by six different kinds of poor care (e.g., lack of hygiene, education, medical care) and is the easiest of the four types for others (e.g., teachers, caseworkers) to identify (USDHHS, 2023). Physical evidence of maltreatment is sometimes available in the most severe cases (e.g., broken bones, malnutrition), but serious or lasting physical injury is not common in most cases of child maltreatment, making the determination of if a given child was "abused" or not a challenge for most social service agencies. Moreover, not all types of abuse are equal in terms of the evidence left behind or needed to document the presence of abuse (e.g., psychological abuse), making it likely that the number of victims reported in national databases an underestimate of the extent of the problem.

Despite the challenges of gathering accurate epidemiological data on the rates of child maltreatment, the significant number of documented and substantiated cases of youths and families affected by abuse each year is fairly unchanged over the past decade. Reports from 2017 NCANDS suggest in fact that the number of referrals (calls to social service agencies for suspected abuse) has increased 12.1% since 2013, which may indicate an actual increase in the number of youths who are maltreated or greater awareness in local communities about the need to report child maltreatment suspicions. The need for quality research on child maltreatment is evident. Aside from simply documenting that child maltreatment occurred, the majority of research as focused on the impact of being exposed to maltreatment, specifically, the mental, social, and physical effects of maltreatment on the victim and the family of the victim. Perhaps surprisingly, the relation between exposure and outcome is not straightforward as research shows (Kugler et al., 2019) that some youths exposed to maltreatment cannot be distinguished from their peers who have not been exposed making the nature and methods used to document maltreatment and its effects a rich area for additional research. It is also the case that cross-informant correspondence on

outcomes is also low, making this an important area of work as well (Romano et al., 2018).

Possible Solution

It is important that the next generation of research critically consider the definition of child maltreatment used in a given study. Although research has also indicated that there are often no mental or behavioral health differences between a youth whose report of child maltreatment was substantiated by child protective services or not, considering the type of abuse and the reporter of the event is important. Some forms of abuse are simply easier to find than others and failing to ask questions about all kind of maltreatment may lead to heterogenous samples and error-prone results. Some reporters, based on age and proximity to the maltreatment may be better reporters than others. Youths in foster care, who are often asked to recount the their child maltreatment history to officials may be much more comfortable explaining their maltreatment to a researcher given that the youth has told their story several times to other strangers. That said, it is also possible that the youth will share information that is not documented in their official case file, either because of lack of evidence or because the event was too painful or simply forgotten when the child entered the foster care system. Chances are that unsubstantiated cases of abuse are due to a lack of convincing evidence or having to substantiate the kinds of experiences that are hard to define and this can make for contaminated samples where heterogeneity is the rule and not the exception. Unsubstantiated child maltreatment, however, does not mean the abuse or neglect did not occur.

It is important that future research makes clear the definition of abuse used in their study. States differ on what is included in their definition of abuse and so knowing the specific state may be important to acknowledge in future research. For example, only 18 states include human trafficking, including labor trafficking, involuntary servitude, or trafficking of minors in their definition of child physical abuse. Furthermore, only nine states include female genital mutilation in their definitions of physical abuse (Child Welfare Information Gateway, 2022). Although states are free to define types of maltreatment as they like – knowing what a given state does and does not include is important for child maltreatment researchers to know. Unlike a mental health disorder whose definition does not change depending on what state the child lives in, understanding what is and is not considered "abuse" in a given state will help consumers of research place findings in the proper context and aid in generalizability.

Two: Measurement of Child Maltreatment

Perhaps the most vexing aspect of research in child maltreatment is a most basic one, that is, the conceptualization and operationalization of the construct of child maltreatment in research studies. Clearly, science in the field of child maltreatment cannot advance if the research questions under study do not reflect some agreement not only to what the nature of child maltreatment is, but also how it should be measured. However, historically, research in child maltreatment varies widely in terms of what is considered child maltreatment (e.g., any form of abuse counts, only substantiated cases) and as a result, the field is filled with studies that address youths exposed to different kinds of abuse and at different levels of severity and frequency.

Moreover, the field also includes a range of sample types. Some research conceptualizes child maltreatment victims as those who are known to child protective services and relies on data from the State's case file whereas other studies include youths in foster care, whose abuse is severe enough to warrant removal from their home of origin. Some studies collect evidence of maltreatment status directly from the victims, relying on retroactive self-report and not external evidence to define who is a victim of abuse. Although this work is important, it is therefore, hard to make clear conclusions about "child maltreatment" as a whole and its effects when some studies define this experience for example, as physical abuse only, or multiple kinds of abuse exposure, or documented exposure only, or all of the above. Moreover, a significant portion of studies on child maltreatment include adult reporters thinking back on their childhood, making memory of abuse a significant contributor and perhaps inadvertently, possibly the more salient variable under study instead of documented episodes of exposure.

Accurate measurement of child maltreatment is hard for several reasons. First, most research, even research that includes youth samples, relies to some degree on recall of what happened in the past. Although this is likely true of studies of other kinds of trauma, prospective studies of abuse are rare and very hard to do given ethical concerns over having to report to authorities perhaps, nearly everyone in the study who reports a current experience of abuse exposure. That is, unlike endorsing a recent divorce, or illness, or loss or unwelcomed change does not require researchers to inform another authoritative body whereas endorsing a recent or contemporary abuse event might make most researchers reluctant to ask about present-day abuse that may not require a good memory. Balancing confidentiality of

participants with state mandated reporting laws is an especially treacherous part of research on child maltreatment leaving most researchers to rely either on retrospective reports or case file data supplied by state social service agencies. Second, part of the challenge lies in the freedom perhaps afforded to states to operationalize child maltreatment as they see fit, as long as that definition or measurement is in line with the federal definition. Researchers have largely taken part in this process by agreeing that generally child maltreatment includes the four types of abuse identified by federal law. Accessing youth exposed to maltreatment is not easy and to avoid having to report all of the participants in a study to authorities, some research has focused on recruitment of youths in foster care, where the abuse is already known to law enforcement. Youths in foster care, however, are placed there for a range of reasons, child maltreatment exposure the chief reason, but siblings not known to be abused are also removed in the name of safety and these youths also populate the roles of foster care databases making it clear that "youth in foster care" are far from a homogenous population from which to sample. Third, because being a victim of abuse can have a stigma that is not common to other kinds of experiences (e.g., witnessing violence,) getting accurate reports of abuse is perhaps more challenging than assessment of other forms of potentially traumatic exposures.

Possible Solution

Clarify the sample and acknowledge sample and data limitations. One of the first steps in addressing the definition issue is to require that all research on child maltreatment go beyond the simple sample descriptions common in research. Because child maltreatment can include any one or several of the four common types – researchers should avoid any yes/no maltreatment questions and seek to measure precisely the kind of exposure the youths in the sample have experienced. Part of the issue is that researchers do not ask about multiple types of abuse and thus may mistakenly assume that if a child endorses child sexual abuse, that is the only form of abuse the child experiences. Measuring the construct of child maltreatment is not easy, but it is also the case that researchers are not required to do much more than report general descriptions on the kinds of abuse the sample endorsed or were available in large national datasets. For the latter, given that the data comes from states – it is likely that large national databases include the sample flaws of measurement represented at the state level, meaning, states are not required to report much more than type of abuse, a yes/no question, making relying on these sources for any kind of nuance or details of the youth's experience very unlikely.

What is needed are tools that measure child maltreatment experiences and not simply tools that measure counts of abuse exposures or "trauma symptoms" – the latter often used as a proxy for being exposed to some form of trauma without actually measuring the trauma. Moreover, simple checklists are useful, but likely not sufficient. A score of "5" events of abuse is fairly impossible to interpret given that these 5 can represent a myriad of events that even if identical to another youth's report, does not mean the two youths had the same experience of those same kinds of events (e.g., sexual abuse – sexual contact that included penetration and sexual abuse that was limited to over the clothes touching would both rate a score of 1).

Three: Range of Methods and Approaches to Research Design

Along with the issues associated with definition and measurement of child maltreatment is the issue of timing. Specifically, how old a youth was when the exposure occurs matters. If the research question is about how X abuse is related to Y behavior – it is critical to know at what developmental age the child was at the time of X. We as clinical child psychologists understand that expected development by age is the foundation on which all assessments of pathology are made. Yet. we are often reluctant to consider how old a youth was when X occurred even when it is clear that the physical damage from child maltreatment is much more likely to be significant if a child is 3 years old when the child is assaulted compared to that same child at age 16 years old. If the visible physical damage is likely to be different, so too will the mental and emotional damage. Most research on child maltreatment does not consider the age of the child at the time of the abuse event, primarily because that information is very hard to know. That said, much of what likely predicts the "outcome" of abuse events is related to how the child was functioning at the time of the abuse exposure.

Often the approach in research is to document the youth's mental or physical well-being at the time of the study with little or no attention to how old the child was when the exposure occurred. That is, time since exposure is important and what is often impossible for researchers is to get access to real time effects after maltreatment is reported. The vast majority of sample of youth in child maltreatment studies experienced the maltreatment months or years before being in a research study making links to current behavior or physical problems problematic at best and a guess at worst.

On the positive side, many large-scale, longitudinal research studies have been conducted over the years. For example, the Longitudinal Studies of Child Abuse and Neglect (LONGSCAN) (Runyan, 1998), the National Study of Child and Adolescent Well-Being (NSCAW), the Christchurch Health and Development Study (Trickett et al., 2011; Widom et al., 2004), and the Dunedin Multidisciplinary Health and Development Study – have yielded rich data on the developmental progression of negative long-term outcomes associated with child maltreatment (MacMillan et al., 2013). Most of what is known about the psychosocial impact of child maltreatment comes from these studies

Moreover, research on child maltreatment tends to collect data from one of two sources: (a) the victim or victim's family, or (b) national and state databases. For the latter, a myriad of limitations are common to large national and state surveillance systems, most of which rely on NCANDS data. Data collected by state and federal agencies are for the most part reserved only for youths reported to child welfare agencies (Medina et al., 2012). Although important, these youths likely reflect the minority of youths in the US who experience child maltreatment because they only represent those that come to the attention of a child welfare agency. Perhaps an even greater concern with national databases is the fact that contribution to the database is voluntary with little to no requirement that the data submitted by one state be consistent in format or in definition to another state making cross-state comparisons difficult (Government Accountability Office [GAO], 2011). Moreover, data from state and national databases often lag behind real time by as much as two years making timely response to the data a challenge. It is also important to note that some states have expunction rules, meaning some child maltreatment records can be permanently deleted after a specific period of time (e.g., all unsubstantiated allegations after seven years) making it unclear if data drawn from state records reflects the full exposure history for a given youth. Finally, these databases rarely collect information on many of the well-known factors associated with child maltreatment including the presence of drug use, domestic violence, mental health status of caregivers, socioeconomic status of families, education level or other exposures to adversity and trauma making the unique role of the "maltreatment" in subsequent mental and physical health hard to pinpoint.

Possible Solution

Suggestions for improving research design likely start with improving the surveillance of child maltreatment. Specifically, efforts are underway across many states to link data from multiple independent sources, connecting cases across different databases, and enforcing the standard case definitions (Medina et al., 2012). Because youths exposed to maltreatment often come into contact with multiple systems (e.g., health care, social services, education, law enforcement) aggregating data across multiple independent sources can improve the identification of cases as well as improve the nature of subsequent research designs. So far, linking databases has yielded important results. For example, in California, linking birth certificate data with child protection records for more than two million children aged five and younger enabled the identification of variables associated with high rates of child abuse and neglect (Putnam-Hornstein & Needell, 2011). The study found, for example, that one of every three children born without established paternity were reported to child protective services for abuse and neglect; about 1 in 10 children born to teenage mothers were victims of abuse and neglect. Case-linkage studies are proving important for the early identification of groups that are at highest risk and therefore most likely to benefit from public health interventions. It is also important that researchers include research models that include the complexity of the experience of child maltreatment. Collaborating across disciplines as well as examining effects longitudinally, although also complex is likely the best next step for the field to understand the impact of child maltreatment.

Four: Confounded Risk and Protective Factors

The problems associated with risk and protective factors association with child maltreatment is a problem both for the data in national and state databases as well as for individual labs. That is, information on many of the well-known factors associated with child maltreatment (e.g., substance use in caregivers, social support, developmental delays, mental health of caregivers) is rarely collected and thus rarely considered in child maltreatment research making the unique role of the "maltreatment" in subsequent mental and physical health hard to pinpoint.

It is important to note that child maltreatment does not occur in a vacuum and the data is clear that it is associated with familial factors such as domestic violence, parental substance abuse, poverty, and parental mental illness, as well as community violence and adversity. A number of studies have found a roughly stepwise dose response of increased morbidity as a function of the number of different types of maltreatment and family dysfunction experienced by an individual (Appleyard et al., 2005; Flaherty et al., 2009). Critiques

of child abuse and neglect research frequently point to the failure to measure confounding risks factors as a major flaw in many studies (Whitaker et al., 2005). Researchers investigating causal pathways, or the effectiveness of interventions face the task of measuring and controlling for these coexisting risk factors and their cumulative and potentially synergistic impact on the outcomes of interest (Putnam-Hornstein et al., 2013).

Possible Solution

It is important that research on child maltreatment also includes assessment for the well-known factors associated with child maltreatment. If the goal is in fact to isolate the unique effects of child maltreatment, it is imperative that future research address what are often confounders to effective intervention, namely family and caregiver dysfunction. The field needs expertise in the measurement of these confounding variables and includes a multidisciplinary, multimodal approach. Possible confounders of effects should be routinely assessed and measured before conclusions about the effects of "maltreatment" are reached with confidence.

General Recommendations and Next Steps

Although unfortunately maltreatment of youths is not new, child maltreatment research is in its infancy. Before addressing each of the challenges to research it is important to note that for the child maltreatment field to progress *a significant shift in sharing information is required*. Perhaps many of the issues presented here could be addressed if the disciplines focused on child maltreatment were not so siloed. It is a strong encouragement for those in a given discipline to read and become acquainted with the definitions, approaches, and research questions investigated by several fields on child maltreatment so that the science moving forward is informed by the collective knowledge of research endeavors. To this end, the researchers at Penn State University (home of the Child Maltreatment Solutions Network, CMSN) is developing a science repository; a place where findings on child maltreatment across multiple disciplines are available and shared. The hope is that by having one place where interested stakeholders and scientists can share their findings, there is less of a chance of reinventing the wheel and more of a chance that the science, moving forward, will increase in rigor. Moreover, the CMSN is also in the process of creating several think tanks where individuals from multiple disciples can meet and discuss the most pressing research questions for the field. By bringing stakeholders together (e.g., social service administrators, policy makers, researchers, clinicians), the immediate needs of the field and the victims of child maltreatment can be better served.

By creating opportunities outside of journal articles for researchers in child maltreatment science to meet and design new projects, the field of child maltreatment science will improve its impact on public health. Moreover, this repository will include policy briefs on child maltreatment so that the influence of the science on the real world policy can be investigated. Knowing what lawmakers and state administrators are doing in response to child maltreatment is paramount to ensure that the science is meeting the need of victims and their families. Although the state of the child maltreatment science field is demanding, it is possible to address each of the challenges detailed here. The next generation of child maltreatment science will benefit greatly by attending to each of these possible solutions and next steps for research.

Next Steps for Research

One, given that child maltreatment is not homogenous, that types of abuse vary in terms of their severity and frequency, researchers are encouraged to provide consistent and clear definitions of child maltreatment in their sample. Future research cannot move the field forward if assessment of child maltreatment is not comprehensive. The nature of abuse can and does vary from victim to victim so if the goal is to be able to generalize to the general public of the youth exposed to abuse, then researchers will have to provide a much more thorough assessment of the nature of the experience for the youth in their sample. If using case file data, the study should articulate what kind(s) of abuse the sample experienced, what the state definition of abuse was at the time and how this abuse was measured or assessed. Perhaps most importantly, the age of the child at the time of exposure is paramount to understanding anything about the effect of child maltreatment.

Two, researchers should consider that it may be the host of other traumas associated with child maltreatment and not the maltreatment itself that could be at work in predicting youth outcomes. For example, in almost half of the cases of child sexual abuse, the perpetrator has a substance use issue, in many cases of child physical abuse, the perpetrator has a history of mental illness or exposure to significant trauma – either of these living environments could account for at least some of the variance in how youths respond to child maltreatment. On a related note, recent efforts to link large national and state databases provide some promise that youths exposed to child maltreatment can be

tracked as they are involved in other systems. For example, linking the juvenile justice and Medicaid databases with child welfare agency databases can provide an opportunity to identify multisystem involved youths so that prevention and intervention services could be coordinated.

Three, given the complexity of child maltreatment research, future studies should design their work with complexity in mind. Meaning, child maltreatment is not a singular event understood by all as the same thing, nor is it an experience that is related to a single consistent outcome. Therefore, the field would benefit from designing models of child maltreatment. The models should include several factors. To start, the nature of the maltreatment (e.g., type, severity, frequency) much like is done for clinical disorders. For example, one would not consider X behavior to be depression if several qualities were not present and if those qualities were not of sufficient severity and frequency to warrant a clinical condition. The same could be said for child maltreatment. Given that the experience up to now in most research is not based on the same metric, future research should invest in examining where are the key elements that make this experience a "clinical" one. Perhaps ignoring any aspect of child abuse may at first seem problematic but consider that not all youths exposed to even the same type of abuse or even the same severity demonstrate the same outcome behavior problems and for some, no measurable problems at all. It is important that interventions to address public health problems like child maltreatment be based on data, not anecdote and it is our responsibility as scientists to make sure that the work in this field is empirically driven. The model should also include the age of the child at the time of exposure(s) and who the perpetrator was in relation to the child. Research shows that the "who" is just as important as the "what" and researchers would likely develop better predictive models by considering that child maltreatment, unlike other adversity such as natural disasters and poverty, is interpersonal and to leave out how relationships are impacted by abuse likely makes our ability to predict adjustment somewhat limited.

Four, child maltreatment models should include what happened after the exposure as a part of their research questions. Often the development or maintenance of psychopathology or maladjustment is the result of caregivers and professionals not acting quickly enough or responding at all to what are considered at the time to be nonclinical problems. The fate of this approach is that for many victims of abuse, a host of other factors (e.g., child not believed) including the stigma of child maltreatment is allowed to flourish, much to the detriment of the child's well-being. It may very well be the case that the abuse event was harmful, but without assessment of what those around the child did in response to the exposure, if the child received support or professional services, if the child was removed from the care of the perpetrator could say a lot for how the child is doing by the time the child is a participant in a research study.

Five, it is important to consider culture in any research question related to child maltreatment, particularly given the heterogeneity of families (IOM, 201; National Research Council [NRC], 2011). Examples of cultural factors relevant to child maltreatment include child-rearing practices (Earle & Cross, 2001; Waters & Sykes, 2009), fathers' parenting behaviors (Ferrari, 2002), adultification of young children (Burton, 2007), child-care burdens (Roditti, 2005), perceptions of neglect (Evans-Campbell, 2008), sibling caretaking and self-care among children of immigrants (Greene et al., 2011), and the role of extended families in systems of parental authority and disciplinary practices (Fuhua & Qin, 2009). Understanding cultural factors related to risk and protective factors for child abuse and neglect or the effectiveness of interventions requires the complementary use of qualitative and quantitative research methodologies (Korbin & Spilsbury, 1999).

The importance of a focus on culture goes beyond understanding the causes and consequences of child maltreatment and involvement with child protective services or other social service systems. Culture matters in developing and testing the effectiveness of prevention and intervention strategies and replicating and adapting evidence-based practices for distinct populations or groups to ensure cultural fit, reach, efficacy, and adoption (Barrera et al., 2011), as well as the social validity and practical application of an intervention (Lau, 2006).

Conclusions

According to the most recent statistics from the Centers for Disease Control and Prevention (CDC), one in seven children have experienced child abuse or neglect in 2020 in the United States and that this figure is likely an underestimate given underreporting. Moreover, in 2020, 1,750 children died of abuse and neglect in the United States. Although thankfully the majority of youths exposed to child maltreatment do not perish, the impact of exposure to child maltreatment can be stable and life changing. There is no question that the imperative to study the causes and consequences, prevention and treatments for child maltreatment continue to be significant. It is also true that child maltreatment is perhaps one of the most complex experiences for

empirical study. Research in the field involves diverse but related disciplines, ethical issues and levels of outcome analysis ranging from the individual child to national statistics. The field has yet to establish uniform definitions and measures for all types of child abuse and neglect, mainly because of the diversity of research disciplines involved and the varying sources from which data are collected. Researchers also must appreciate the host of co-occurring risk and protective factors before making conclusions about the causes or consequences of child maltreatment. These challenges highlight the need for a sophisticated, multidisciplinary research infrastructure. Despite the many years of study significant components of the field's infrastructure remain inadequately developed although new child maltreatment centers like the one at Penn State, Washington University and the University of Rochester provide some promise. The field needs interdisciplinary collaboration and the integration of cross-disciplinary methodologies and measures to yield robust study designs. The field will also benefit from continued efforts to link child maltreatment and other health and well-being databases (e.g., child welfare and school records) to support more universal knowledge on the outcomes and services needed by victims of child maltreatment. Finally, the field needs more research using study designs that appreciate the methodological sensitivity needed to adequately incorporate the impact of culture and other social factors that may inform the causal pathways of child maltreatment, particularly for marginalized and/or underresearched populations.

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