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Child maltreatment data

Child Maltreatment Data: A Summary of Progress, Prospects and Challenges

Authors and Affiliations
John D. Fluke, Kempe Center, Department of Paediatrics, University of Colorado School of Medicine, USA
Lil Tonmyr, Family Violence Surveillance, Public Health Agency of Canada, Ontario, Canada
Jenny Gray, Director, Child and Family Training (UK) and Honorary Lecturer, Institute of Child Health, London, UK
Leonor Bettencourt Rodrigues, Institute of Social Sciences - University of Lisbon, Portugal
Flora Bolter, Chargée d'études chez L'Observatoire national de la protection de l'enfance, France
Scottye Cash, School of Social Work, the Ohio State University, USA
Andreas Jud, Department of Child and Adolescent Psychiatry/Psychotherapy, University of Ulm, Germany, and School of Social Work, Lucerne University of Applied Sciences and Arts, Lucerne, Switzerland
Franziska Meinck, School of Social and Political Sciences, University of Edinburgh, UK, and Optentia, Faculty of Health Sciences, North-West University, Vanderbejlpark, South Africa
Abigail Casas Muñoz, Instituto Nacional de Pediatría, Mexico
Melissa O'Donnell, Telethon Kids Institute, University of Western Australia, Australia
Rhiannon Pilkington, School of Public Health, The University of Adelaide, South Australia, Australia
Leemoy Weaver, The University of the West Indies, Mona Campus, Jamaica

Background: In 1996, the ISPCAN Working Group on Child Maltreatment Data (ISPCAN-WGCMD) was established to provide an international forum in which individuals, who deal with child maltreatment data in their respective professional roles, can share concerns and solutions.

Objective: This commentary describes some of the key features and the status of child maltreatment related data collection addressed by the ISPCAN-WGCMD.

Methods: Different types of data collection methods including self-report, sentinel, and administrative data designs are described as well as how they address different needs for information to help understand child maltreatment and systems of prevention and intervention.

Results: While still lacking in many parts of the world, access to child maltreatment data has become much more widespread, and in many places a very sophisticated undertaking.

Conclusion: The ISPCAN-WGCMD has been an important forum for supporting the continued development and improvement in the global effort to understand and combat child maltreatment thus contributing to the long terms goals of the UN Convention on the Rights of the Child. Nevertheless, based on what has been learned, even greater efforts are required to improve data in order to effectively combat child maltreatment.

1. Introduction

As is the case for all public health concerns data collection, analysis and reporting (surveillance data) are widely acknowledged as a key components in the development of policies and programs to prevent child maltreatment. For example, the recent INSPIRE Handbook sets out how data can be utilized effectively to support implementation of the seven strategies for ending violence against all children worldwide by 2030 (World Health Organization, 2013; 2016; 2018). Data collected in different settings and from various populations using different methods are crucial for understanding the circumstances associated with child maltreatment. Knowledge of these circumstances may aid in the prevention of child maltreatment through detection of early intervention opportunities. Monitoring of trends over time and across jurisdictions can also be used as an indicator of the need for resources and the impact of external factors such as general economic indicators. Data are aslo used to evaluate programs, play a role in formulating key performance indicators, and serve as a basis for assessing effect sizes in comparison studies including random control trials (Stroup, 1992). To ensure child maltreatment data are available and can be used to meet these ambitious objectives, surveillance data need to be evaluated in terms of their representativeness, accuracy, timeliness, flexibility in incorporating emerging issues and acceptability to users in addition ethical issues requires attention (Klaucke et al, 1988). While the benefits of having access to child maltreatment is clear, the data   require contextualization that addresses historical and contextual origins in addition to concerns about methodological quality.

To provide a forum in which individuals who deal with these issues can share concerns and solutions, the International Society for Prevention of Child Abuse and Neglect established a Working Group on Child Maltreatment Data (ISPCAN-WGCMD) during the ISPCAN congress in Dublin in 1996. Through support and the exchange of information, ISPCAN-WGCMD aims to enlarge the international child maltreatment community concerned with epidemiologic research and to document improvements in and the creation of new data collection systems (Tonmyr, Gray & Fluke, 2006; Fluke, Tonmyr, Bianchi, Gray, Halifax, Kim, 2008; AlEissa et al., 2009; Albrecht et al., 2012; Jud et al., 2013). It also offers technical assistance to nations in creating and sustaining data collection programs. Examples include ISPCAN's Child Abuse

Screening Tool (ICAST) (see Runyan (2019) this issue), resources available on the ISPCAN website, such as a tool kit for data collection (Scott & Molnar, 2013), and a report addressing ethical considerations that arise when children are asked about maltreatment (ISPCAN, 2016). Recently, members of the ISPCAN-WGCMD guided the development of resources on the collection of data on hard-to-reach populations, specifically, migrant children (Jud et al., forthcoming). The ISPCAN-WGCMD hosts special topic sessions and has initiated an epidemiological stream at ISPCAN congresses that focus on topics such as administrative data, ethics, the utility of ICD coding of child maltreatment, and inter-jurisdictional comparisons. This in turn, fosters the development and nurturing of professional relationships and networks that are seeking to improve the collection and use of child maltreatment data to ultimately improve outcomes for children.

This paper presents an overview of the latest ISPCAN-WGCMD discussion of progress, prospects and challenges in child maltreatment data collection using a framework developed by Leeb and Fluke (2015) that addresses the issues of enumeration, monitoring, evaluation, and decision-making.

2. Data Collection Methods

Methods in child maltreatment data collection are key to understanding the state of the art with respect to how data are collected, the limitations, how data are utilized, and the potential for such data to contribute to improving outcomes for children (World Health Organization, 2018).

2.1 *Types of child maltreatment data collection*

The processes used to obtain data about child maltreatment generally include three broad methodological types; self-report, sentinel, and administrative. All three are important for different reasons and are presented in no particular order here. It is important to note that each method entails attention to definitions, populations, sample design, data gathering tools or instruments, specific data gathering methods appropriate to the type of method and population, data quality, and analytics.

2.1.1 *Self-report methods*

Self-report methods are based on collecting data from the individuals who were or are involved either as victims, persons responsible for maltreatment, and who are part of a population at risk for these behaviors. One of the common goals of such studies is to estimate prevalence of maltreatment. Generally, these are respondent level studies that either include a specific target population (e.g., school children), or are based on data from the general population (Radford, Bradley, & Fisher, 2013). There are several sub-categories of self-report populations including children, child caregivers (contemporaneous studies), and retrospective studies of older children and adults. Most of these tools involve the use of validated survey methods ranging from random digit dialing to in person household interviews. Some well known examples include studies based on the Juvenile Victim Questionnaire (JVQ) (Finkelhor, Hamby, Ormrod & Turner, 2005; Finkelhor, Turner, & Hamby, 2011), the Adverse Child Experiences (ACEs) (Anda, et al., 2006), the Multiple Indicator Cluster Survey Child Discipline Module (MICS) by UNICEF, and the ICAST (Zolotor, et al., 2009).

2.1.2 *Sentinel methods*

Sentinel methods are data collections of child maltreatment based on the knowledge of individuals (usually professionals) in the community who work with children and are aware of situations involving abuse and neglect. Like self-report studies, sentinel studies are focused on the development of prevalence estimates tied to potentially identifying cases that are recognized within communities. These studies can include personnel from social services, law enforcement, education, health services, and child care. These methods are also sometimes used in longitudinal studies. Examples include the US National Incidence Study (NIS) of Child Abuse and Neglect (Sedlak, et al, 2010), the Netherlands Incidence Study (Euser, van Ijzendoorn, Prinzie, & Bakermans-Kranenburg, 2009) and the Canadian Incidence Study of Reported Child Abuse and Neglect (CIS) (Canadian Child Welfare Research Portal, 2019; Public Health Agency of Canada, 2010).

2.1.3 *Administrative methods*

Child maltreatment administrative data are collected through the normal operation of agencies that provide services related to child maltreatment. In general, these agencies include social services, justice, and health services. Typically, studies that use such data focus on

children who are maltreated and referred to agencies that are oriented toward providing interventions. Normally, these methods use census methods, and data are continuously compiled allowing for the development of trend and longitudinal data sets. In some cases these data are linked with data from other administrative data from other service sectors, with self-report, and sentinel data. Examples of administrative data programs that include child maltreatment data are more often found in developed countries and include the National Child Abuse and Neglect Data System (NCANDS) (USDHHS, 2019b), and the Australian Child Protection data program (AIHW, 2019). In the UK, governments in all four countries collect child maltreatment data from local authorities and publish it annually (Department for Education, 2018; Department of Health, 2018; Scottish Government, 2018; Welsh Government, 2019).

The ISPCAN-WGCMD considers the range of methods described above to be important in developing systems of surveillance, improving our understanding of the epidemiology of child maltreatment and generally serving to address the functions of enumeration, monitoring, and evaluation.

3. Child Maltreatment Data Collection Ethics

Ensuring the collection, analysis and publication of child maltreatment data are undertaken in an ethical manner is a key concern in the field. In response to concerns about ethical dilemmas raised during the ISPCAN-WGCMD sessions at the 2013 European and Latin American Regional Conferences a paper was commissioned, *Ethical Considerations for the Collection, Analysis & Publication of Child Maltreatment Data* (ISPCAN, 2016). At that time, there were no internationally recommended or agreed ethical guidelines available and a UNICEF review had called for more research on the ethical issues arising from the collection of data on child maltreatment (Child Protection Monitoring and Evaluation Reference Group, 2012). More recently the United Nations Children's Fund (2018) set out, in recognition of the importance of the ethical considerations when collecting surveillance data and undertaking research, practical advice and recommendations on how to address the range of ethical issues and challenges that arise when collecting data on violence against children and adolescents in the context of implementing programmes and policies described in the INSPIRE Handbook (World Health Organisation, 2018).

ISPCAN's review identified a number of ethical considerations uppermost in the minds of those involved in research with children and young people – ethics boards, researchers and commissioners of research. Their concerns were: children not being further harmed or distressed as a result of taking part in research; researchers responding appropriately when, during data collection, a child discloses they were or have been abused; how best to seek consent to participate, and whether and when parents' or caregivers' consent should be obtained; how to ensure privacy and confidentiality when children are providing information; and, adapting research methodologies to local contexts and different cultures. Interestingly, researchers who informed the study (ISPCAN, 2016) had found fewer children than anticipated disclosed current maltreatment and the numbers of those who did were small; in addition, although a small proportion of children had felt upset after taking part in the research, they still considered it was worthwhile to do so. Despite the risks of identified harm being considered to be small, the researchers reported following stringent processes and practices to prevent children suffering harm and to respond appropriately to any disclosures.

The paper also identified other important ethical issues including data access and analysis quality, publication of data anonymously, preventing misrepresentation of data (especially for political reasons), and testing methodologies for cultural appropriateness. To assist colleagues and address the issues they had raised, the paper includes a number of case examples illustrating how various ethical dilemmas were managed by researchers and ethical boards. Finally, the paper makes recommendations and provides suggestions about future research areas.

4. Data Quality, Sources Of Bias, and Other Considerations

No data are perfect. Researchers involved in collecting and using child maltreatment data should thoroughly assess and transparently report on the quality of data they use as these data may be used for developing policies, programmes and projects (Tonmyr & Martin, 2014; Fallon, Filippelli, Black, Trocmé, & Esposito, 2017). The quality of data depends on many things including the conceptualization and definitions of child maltreatment, data collection methods, sample identification, and where relevant recruitment.

A recent review identified factors that could influence the quality of self-reported child maltreatment data collection (Laurin, Wallace, Draca, Aterman & Tonmyr, 2018)). Among these

factors were the child's age and developmental stage. Notably, the information provided by adolescents was considered to be of higher quality owing to their age, although for adolescents experiencing maltreatment the relatively short period since maltreatment can also reduce recall bias. Other barriers to self-reporting include fear, discomfort, and shame evoked by recollection of the exposure (Laurin, et al., 2018). Hovdestad and colleagues (2015) also observed that few retrospective self-report measures used to collect retrospective child maltreatment data have established psychometric properties.

Parent/caregiver reports may underestimate their own abusive behaviour, and they may not be fully aware of their child's exposure to maltreatment (Finkelhor, Ormrod, Turner & Hamby, 2005). Data reported to authorities tend to underestimate the scope of the problem (Afifi et al., 2015; Tonmyr, Mathews, Shields, Hovdestad & Afifi, 2018). In addition, inconsistencies in how child maltreatment is reported and defined across jurisdictions creates challenges for interpretation. Other issues include variation in units of analysis (child versus family), completeness of data (Fallon et al., 2010), and that administrative data collected for purposes other than research may not include pertinent information (Brownell & Jutte, 2012).

A key area that requires attention by researchers collecting child maltreatment data is cultural diversity which includes the use of language and the belief systems. These can have a significant impact on the conceptualization and definitions of child maltreatment. If the data user is not familiar with the cultural context of the population under investigation, the meaning underlying the data may become lost in translation. Different cultures may have different terms to express disciplining a child as opposed to child maltreatment. Some words indicate the severity of the physical disciplinary act (Coleman, Dodge & Campbell, 2010). For example, the use of the term "spank" or "clap" as used in two different cultures are sometimes viewed as more gentler forms of discipline as opposed to the term "cuff" which connotes more brute force than "spank" or "clap."

In addition, religion, as a cultural dimension, plays an important role in setting the standards for people in their understanding of child discipline as opposed to child maltreatment. Whereas the ancient religious texts may have modifiers in the use of punishment, this may be lost to the average adherent of the religion. The result is that punishment can become an instrument of child maltreatment disguised as discipline and parents who are deeply religious are more likely to use corporal punishment (Wolf & Kepple, 2016). To that end, in a study conducted by Islam and

Rahman (2015), the researchers reported that a Malaysian couple was arrested by Swedish police for hitting their children for not performing prayer. Swedish law strictly prohibits corporal punishment while Islam supports this as a form of discipline. Thus for some religious communities the legal requirements in their adopted country may create barriers to reporting.

Another difficulty resides in situations where legislation requiring mandatory reporting of child maltreatment exists and researchers may then be faced with ethical and legal dilemmas. Two such potential risks are exposure of the researcher to legal sanctions, and the participants' reluctance to answer questions which they feel may lead to self-incrimination. Therefore, the researcher must be cognizant of the intricacies of religion, culture, and law that can impact the quality of the data collected.

5. Data Linkage Methods

Over the last 20 years with the rise in electronic administrative governmental datasets, new opportunities to utilize existing administrative data for research and monitoring of child maltreatment have emerged. At the state/province level, and in many cases at the country level, government agencies have been able to monitor indicators of child maltreatment in child protection agency registers as well as health data (including hospital admission records and emergency department presentations) (Gilbert et al., 2012). With computers able to handle much larger datasets and computer programs able to perform more sophisticated analysis the potential use of data has expanded.

The use of data linkage, which is a 'technique for creating links within and between data sources for information that is thought to relate to the same person, family, place or event', has become an emerging methodology in this area (Holman et al., 2008, p. 767). Data that have been linked across governments include child protection, health, justice, disability, education and housing. Data linkage has enabled a wider exploration of indicators of child maltreatment, the ability to gain a better understanding of the risk and protective factors, and the outcomes for children who experience it (Brownell & Jutte, 2012). This has important implications, as the World Health Organisation and many countries have supported the implementation of a public health approach for child maltreatment, with linked data enabling researchers to investigate factors leading to maltreatment focusing on targeted early intervention (World Health Organisation, 2013).

Also, in recent developments, linked administrative data has enabled the monitoring of indicators and risk and protective factors at a geographic level. Geographical mapping provides the ability to investigate the relationship between indicators, vulnerability factors, distribution of services, as well as the variability of outcomes, enabling governments to focus resources on areas of need (O'Donnell et al., 2017). The prevention of child maltreatment is a complex issue requiring the collective effort of government departments. Linking government data provides opportunities for government to develop cross-agency strategies, to promote shared responsibility for implementation, and the use of evidence-based data monitoring of indicators and outcomes to enable progress towards the reduction of maltreatment and improved outcomes for those who experience it (Data Linkage Western Australia, 2019).

In Europe, the Child Abuse and Neglect Minimum Data Set (CAN-MDS) project developed a common minimum data set and associated toolkit (European Commission, 2015), the implementation of which is being piloted in six European Countries (European Commission, in progress). This computerised surveillance system links incident-based child level information from key services (e.g. health, social welfare, education/school, law enforcement, judiciary, NGOs) involved with each child from the point of referral about a child protection concern to case closure. The CAN-MDS System is being developed to strengthen efficient co-ordination and co-operation among professionals *at a case-level*. In parallel, *at a population-level* the system aims to operate as a mechanism for collecting uniform, reliable and comparable epidemiological data for incidence of reported CAN cases and changes in the magnitude of the problem over time at local, national and international levels.

6. Cross-Jurisdictional Comparisons

The challenges in comparing epidemiologic estimates of child maltreatment across jurisdictions have been well documented (Leeb & Fluke, 2015). Child maltreatment definitions, data collection and reporting methods, legislation, policies, and societal awareness are all examples of local contexts that can impact comparisons of child maltreatment trends between and within jurisdictions. However, despite these challenges, comparing child maltreatment indicators across and within jurisdictions is a laudable goal. It creates a form of natural experiment where the impact of policy and practice innovations in one jurisdiction can be compared to a 'control' jurisdiction, to generate insights into the impact of these innovations on child maltreatment.

Some of these aforementioned challenges some may be partly addressed by triangulating across multiple data sources. For example, Gilbert et al. (2012) utilized data from six jurisdictions[1] on violent deaths, maltreatment injury-related hospitalisations, and contact with child protection agencies in federal countries. In contrast to *similar* rates of maltreatment-related injury hospitalisations, results demonstrated discrepancies in child protection investigations and out-of-home care placements between jurisdictions. These discrepancies were interpreted as reflective of different government responses to child maltreatment risk and occurrence, possibly related to early intervention policies (Gilbert et al., 2012).

Triangulation across multiple data sources to compare across and within jurisdictions (e.g., Gilbert et al., 2012) should be considered the gold standard. However, limitations in data availability can result in indicators reflective of only the more severe child protection cases. The high specificity of these indicators may minimise false-positives i.e. decisions that there is evidence a child is being maltreated when they are not, but this comes at the cost of potentially identifying only a small proportion of maltreatment cases (sensitivity). The use of other agency collected indicators of child protection risk - such as notifications - may be one way to provide a more sensitive whole-of-population view of child maltreatment risk. Ensuring governments increase access to comprehensive child protection and service data for de-identified data linkage and research, will continue to be invaluable in developing the evidence base for how policy and practice innovations impact child outcomes. Cross-jurisdictional comparisons provide one method from which to gain these insights (Jud et al. 2018; USDHS, 2019b).

7. **Child Maltreatment Data Utility**

7.1   *Enumeration*

Since the *World Report on Violence* asserted the need for better assessment, monitoring and data on child maltreatment (Krug, Mercy, Dahlberg, & Zwi, 2002), there has been major progress and new challenges regarding data collection, its use and its implications. Epidemiological data can help to establish the nature and scope of child maltreatment, and monitor changes over time (Esposti, Taylor, Humphreys, & Bowes, 2018). In developed

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[1] The term "jurisdictions" is used to represent states, countries, counties, or other terms to describe different locales.

countries, such as the USA, Canada, the United Kingdom and Australia to name a few, systematic data collection based on child protection services are in use. These are sometimes coupled with periodic self-report or sentinel surveys allowing for triangulation. These sustainable surveillance systems have three functional goals: enumeration, monitoring and evaluation (Leeb & Fluke, 2006). In Europe and low and middle income countries (LMIC), administrative data are less likely to be collected and/or available for research. However, there has been an important increase in epidemiological surveillance in LMIC through the use of self-report surveys asking children and caregivers about experiences of maltreatment with multiple administrations over time (UNICEF, 2014). These efforts, if sustainable, provide approximation to the prevalence of maltreatment in these countries.

One of the main challenges in data collection is related to the variation of definitions across jurisdictions (Child Protection Monitoring and Evaluation Reference Group, 2012; Norman et al., 2012). Some intercultural surveys such as the Violence Against Children Surveys (VACS) (Chiang, et al., 2016), the UNICEF Multiple Indicator Custer Survey (MICS) (Currie, Fluke, DiGuiseppi, & Runyan, 2018) and data generated by ICAST (ISPCAN, 2015) have begun to face this challenge by using the same instrumentation across jurisdictions and over time.

7.2   *Monitoring*

Monitoring child welfare data varies across jurisdictions. As described above, definitions of child maltreatment vary across states and countries, which can complicate the ability to fully understand and compare across these different jurisdictions (Leeb & Fluke, 2015; Schwab-Reese, Hovdestad, Tonmyr, & Fluke, 2018; World Health Organization, 2016).

Some countries e.g., United States (USDHHS, 2019a), and Australia (AIHW, 2019), with more advanced technological capacities, are able to rely on administrative databases that allow for data collection from multiple sources on suspected and confirmed cases of child maltreatment. In the US, each state collects child maltreatment data via Statewide Automated Child Welfare Information Systems and submits these data to a national database. In the US, a series of studies (NIS, (Sedlak et al., 2010; National Survey on Child and Adolescent Well-Being (Administration for Children and Families, 2019) have also been conducted using nationally-representative data to obtain information on well-being indicators for children who have been involved in the child welfare systems at different points and levels of services. These two

methods of data collection (administrative data, and sentinel studies) have allowed the US to understand rates and prevalence, but also factors that predict and explain child maltreatment involvement and outcomes.

Other countries and jurisdictions often have to rely solely on one off surveys of professional, caregivers, and children in order to collect cross-sectional data on child maltreatment (UNICEF, 2014). However being able to monitor trends in prevalence is difficult if not impossible using this method alone (Schwab-Reese et al., 2018). Creating robust, accurate, and sustainable monitoring systems allows jurisdictions to monitor trends over time and to capture the effects of policies and practices. The implementation of universal and targeted prevention policies such as changes in health behavioral care access are examples. If data were available at community-based levels, data can be monitored on an ongoing basis to assess progress and identify possible impacts of conditions such as economic changes that may make the situation worse for children.

Additional methodological opportunities have recently been identified for collecting child welfare, monitoring-type data, specifically data from social media, such as Google and Twitter Thus far these methods, while promising, are not producing reliable indicators of maltreatment incidence (Schwab-Reese et al., 2018).

All monitoring systems have their unique challenges and limitations. Progress has been made in developing and implementing monitoring systems, however much more can be done (AlEissa et al., 2009). Finding opportunities to collect and triangulate data across different methodologies and data sources will provide us with the best opportunity to understand child maltreatment services and populations, and to develop and implement evidence-based interventions.

7.3   Evaluation

Developing and funding good-quality prevention and intervention services, particularly in the context of limited public investments, requires evidence of progress, which in turn relies on the identification of relevant and measurable criteria. While evidence-based practices are now fairly commonplace in the field of healthcare, and policymakers at international levels have adapted target-setting as a planning tool (for instance through the 2030 Sustainable Development Goals at UN level and the European National Reform Programs at EU level), this approach has so far not been as successful in the field of social services, and for very good reasons.

Child maltreatment prevention and reduction intervention research is hampered by the lack of validated and reliable measures necessary to establish the effectiveness of interventions. For example, many efficacy studies of child abuse prevention interventions do not measure actual abusive events but use proxy measures such as child conduct problems, attitudes towards corporal punishment or child abuse potential (Mikton & Butchart, 2009). Reductions in proxy measures are not equal to actual reductions in child maltreatment and should not be interpreted as such. There is thus an urgent global need for freely available measures of child maltreatment for intervention studies which are sensitive enough to detect change in abusive behaviours and show good psychometric properties and cross-cultural applicability.

By definition, social interventions deal with a variety of issues connected to a complex ecology of factors that are all strongly connected to local and national socio-demographic contexts and welfare systems. Comprehensively measuring relevant outcomes is a very complex task; one that social service agencies are rarely funded to do. Further, the replicability of programs that are proven effective in a given context is difficult to ascertain in another (Gardner, Montgomery & Knerr, 2015).

In high income countries, researchers therefore often rely on administrative data. These may only capture the most severe maltreatment incidents among children in high risk families (Maier, Mohler-Kuo, Landolt, Schnyder, & Jud, 2013) and often don't include access to maltreatment risk and well-being indicators, even though progress in developing data linkage projects may improve the situation. However, in developed countries the number of studies successfully using administrative data to investigate child protection substantiations or notifications as outcomes in programme evaluation is increasing. Examples of studies that have used administrative data in this way include a randomised controlled trial of Triple P in North Carolina (Prinz, Sanders, Shapiro, Whitaker & Lutzker, 2008), a national evaluation of the Troubled Families Programme (Ministry for Housing, Communities and Local Government, 2019) and a randomised trial of the Building Blocks Nurse Family Partnership model (Robling et al., 2016).

That said, administrative data are often not routinely available in most of Asia, Europe, North America, almost all LMIC, and therefore are rarely able to be used for evaluation efforts in these settings. Researchers in these settings are often left with self-report measures as a sole data collection strategy. However, most child abuse self-report measures and are screening tools for

prevalence and their data collection designs make it challenging to be sensitive enough to detect change in abusive behaviours/experiences especially over short periods of time. Further, as noted before, these studies are often one-off resulting in a lack of data that can be used to assess changes due to policies and practices. Some child maltreatment measures which are more frequently used in intervention studies are also proprietary, posing a significant barrier for early career researchers and those in low-and middle income countries (Ward, Sanders, Gardner, Mikton, & Dawes, 2016). Where researchers have used freely available screening tools and adapted these for intervention studies, even in high risk samples, scores on self-report measures are generally zero inflated as large numbers of participants report no maltreatment, requiring specialist analysis (Meinck et al., 2018). While the initial psychometric testing of these adapted free measures shows promising results, research is still in its infancy. Nonetheless, an increasing number of intervention studies use self-report child abuse measures, either with parent or with child report, in their evaluations. These include the randomised trials of Parenting for Lifelong Health in South Africa (Cluver et al., 2018; Lachman et al., 2017), The Good Schools Toolkit in Uganda (Devries et al., 2015), and the Families First Programme in Indonesia (Ruiz-Casares et al., 2019).

Moreover, and more crucially, most social workers work with individual clients (children, parents, families) on a case-by-case basis, not necessarily within the framework of programs, relying solely on clinical and qualitative methods that do not lend themselves to a quantified impact assessment. Most countries surveyed in WHO's *European status report on preventing child maltreatment* had not set measurable targets for their child maltreatment prevention action plans, and many do not rely on evidence-based programs, which creates a "potential to scale up and focus prevention programs [that] needs to be tapped" (Sehti, Parekh, Huber & Rakovac, 2018).

From the discussion above considerable attention is needed to both develop appropriate tools, and in some cases change the culture of what is considered useful and appropriate in evaluating the effectiveness of child maltreatment prevention and intervention strategies.

7.4 Decision Making (Risk Assessment)

Data are a major currency for decisions in child protection. Their availability is – and likely will be – one of the main challenges as decision-making in child protection takes place in a

framework of uncertainty. Orwellian means to counter the lack of data on children's and their families' situations are, however, unethical. The other main challenge, selective and biased decision-making processes are, on the other hand, constantly tackled by research.

After a child maltreatment case has been referred to child protection services, different decisions follow, including the decision to initiate a response, assess/substantiate, to provide ongoing services, to refer to community services, and to place the child in out-of-home care. Standardized risk assessment tools – as opposed to clinical-intuitive judgement – have been proposed as a remedy to individual cognitive and value-based biases (e.g., Davidson-Arad & Benbenishty, 2016). They have been implemented at different paces in Anglophone countries and other regions. In 1984, Johnson & L'Esperance (1984) conducted the first study comparing a statistical model to clinical prediction of subsequent maltreatment in a United States' child welfare sample (Shlonsky & Wagner, 2005). Professionals in many high-income European countries, on the other hand, have only recently started to implement standardized risk assessment – accompanied by a new wave of research (e.g., Strobel, Liel, & Kindler, 2008). Overall, empirical research has so far tended to confirm the validity and usefulness of standardized risk assessments in child protection (e.g., Arruabarrena & De Paul, 2012); studies also supported their prospective superiority over clinical-intuitive judgement (Baird & Wagner, 2000). Yet, many professionals experience the use of risk assessment tools as limiting instead of widening professional discretion (Høybye-Mortensen, 2015) and as additional workload to be dealt with in a time-saving manner (e.g. by completing the tools after having made the decision). Academics criticize that they may have unintended consequences by obscuring the interactional constitution of the problem (Hall, Slembrouck, & Sarangi, 2006). Their alleged objectivity may produce unfounded certainty instead of supporting professionals to tolerate and responsibly work with the uncertainties of child protection cases (Broadhurst et al., 2010). As many criticisms do not refer to the structuration of risk assessment by a tool per se, but rather its development and embedding in an organizational context (Wastell & White, 2014), a major challenge is not only to construct an accurate tool but also to introduce it appropriately in a given service.

Studies using administrative datasets or sentinel survey data have proven the usefulness of data on substantiation decisions and other decisions in the process being involved with child protective services to inform those who take such decisions, adding real-world evidence and value to the state of the art of research on this topic. Clinical characteristics of children and

families have been proven to explain most of the variance of decision-making points in child protection. Results from secondary data analysis suggest that characteristics of children (e.g., emotional and mental health), caregivers (e.g., addictive behaviour, uncooperativeness), family (e.g., exposure to domestic violence), and housing risks increase child's vulnerability and risk of being substantiated, receiving ongoing services and being placed in out-of-home care (Jud, Fallon & Trocmé, 2012; Lwin et al., 2018; Smith, Fluke, Fallon, Mishna & Pierce, 2018; Stoddart, Fallon, Trocmé & Fluke, 2018).

Recent research, framed by ecological theoretical models – such as the Decision-Making Ecology Model - and using multi-level statistics, have been giving support, though somewhat inconsistently, for the additional influence of environmental factors as worker's and organizational characteristics (Baumann, Dalgleish, Fluke & Kern, 2011; Smith, Fluke, Fallon, Mishna & Pierce, 2017; Smith et al., 2018). There is a need to go beyond enumeration purposes and case-level data collection and enhance the system's capacity to monitor and evaluate decisions and its ability to collect multi-level data that describes the elements of the ecology where the intervention takes place. Therefore, agency and other worker level variables must be additionally explored and systematically collected, cross-confirmation strategies to ensure data quality should be designed and implemented, and long-term outcomes of decisions need consistently follow up.

The task of predicting child maltreatment where it is likely to occur or the likely success of a certain intervention in a given situation is notoriously difficult (Regehr, Bogo, Shlonsky, & LeBlanc, 2010; Shlonsky & Wagner, 2005). The arrival of "big data" technologies combined with new methods of predictive analytics such as "machine learning" are perceived by many as a promise to solve an old problem in a new way (Kum, Stewart, Rose, & Duncan, 2015). However, the implementation of predictive risk modelling (PRM) is accompanied by challenges at the operative, the institutional, the professional, the legal and the ethical level (Cuccaro-Alamin, Foust, Vaithianathan, & Putnam-Hornstein, 2017). At the operative and ethical level, old acquaintances reappear: PRM places high demands on the availability, interoperability and validity of data, along with high requirements for the accuracy of predictive algorithms (Wilson, Tumen, Ota, & Simmers, 2015). Utilizing big data in the best interests of children rather than to (implicitly) establish or expand governmental control and "surveillance" over citizens is ethically challenging (Hyslop, 2017; Veale, 2017).

These types of efforts to use data to support decision are all part of the broader interest of agency leadership across sectors to be better informed about the services they offer and to develop data driven policy. Thus, the domain of decision-making addresses the broader goals of agencies' leadership to increase their capacity and to use data as a part of a foundational resource for Continuous Quality Improvement to improve outcomes. Another key area of data use in child maltreatment is to support policy-makers in decision-making regarding what is best in the way of strategies for intervention and prevention, and how to improve these strategies over time. So far, the United States and other Anglophone countries dominate research on the application of laws, the efficacy of prevention or interventions. Further, the translation of these findings into policy is often restricted to this part of the world (e.g., Goldhaber-Fiebert et al., 2014). For some time, for example, research on mandated reporting has regularly found that professionals often fail to apply the laws (e.g., Delaronde, King, Bendel, & Reece, 2000; Kalichman, 1993). Yet, the rise of legislation on mandated reporting in Europe (e.g., European Union Agency for Fundamental Rights, 2017; Gilbert, 2012) has largely not been built on a recognition and discussion of these findings. It is, however, promising, that jurisdictions increasingly appear to prefer and primarily implement programs and interventions that are evidence-based (e.g., Wulczyn et al., 2015).

8. Conclusions

Since the inception of the ISPCAN WGCMD in 1996, there has been significant progress in the development and use of child maltreatment data globally due to the collective efforts of many researchers and policy makers. The increasing collection and use of self-report and sentinel data, and availability of administrative data, has meant that child maltreatment is more widely recognised as a public health priority than ever before. Indeed, this is a key message in the *Global Partnership to End Violence against Children's* INSPIRE programme for ending violence against children by 2030. However, there is still some way to go to realise the vision of child protection reforms and interventions being driven by evidence of what works to improve outcomes for children. Researchers have a vital role to play in working with government and non-government agencies to improve the uptake of evidence, the collection and availability of data, and to advocate for funding for high quality research focussed on improving child outcomes. This ISPCAN data working group will continue its efforts to work with professionals holding key positions within their respective jurisdictions to build capacity to resolve

methodological, data collection and access challenges. Its ultimate goal is to facilitate a global sustainable infrastructure of robust and comprehensive child maltreatment data that are routinely used in an ethical way to shine a light on what works to prevent and ameliorate the consequences of child maltreatment. As Albright, Schwab-Reese and Krugman (2019, p 2) stress, our approach to child maltreatment should not focus on "child welfare policy made in reaction to a scandal rather than policy based on data".

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