

Child Maltreatment:

Contemporary Issues in Research and Policy 15

Kathryn Maguire-Jack
Carmit Katz *Editors*

Neighborhoods, Communities and Child Maltreatment

A Global Perspective

 Springer

Child Maltreatment

Contemporary Issues in Research and Policy

Volume 15

Series Editors

Jill E. Korbin, Department of Anthropology, Case Western Reserve University,
Cleveland, OH, USA

Richard D. Krugman, University of Colorado School of Medicine, Aurora, CO,
USA

This series provides a high-quality, cutting edge, and comprehensive source offering the current best knowledge on child maltreatment from multidisciplinary and multicultural perspectives. It consists of a core handbook that is followed by two or three edited volumes of original contributions per year. The core handbook will present a comprehensive view of the field. Each chapter will summarize current knowledge and suggest future directions in a specific area. It will also highlight controversial and contested issues in that area, thus moving the field forward. The handbook will be updated every five years. The edited volumes will focus on critical issues in the field from basic biology and neuroscience to practice and policy. Both the handbook and edited volumes will involve creative thinking about moving the field forward and will not be a recitation of past research. Both will also take multidisciplinary, multicultural and mixed methods approaches.

More information about this series at <http://link.springer.com/series/8863>


Kathryn Maguire-Jack • Carmit Katz
Editors

Neighborhoods, Communities and Child Maltreatment

A Global Perspective

 Springer

Editors

Kathryn Maguire-Jack 
School of Social Work
University of Michigan
Ann Arbor, MI, USA

Carmit Katz 
The Bob Shapell School of Social Work
Tel Aviv University
Tel Aviv, Israel

ISSN 2211-9701

ISSN 2211-971X (electronic)

Child Maltreatment

ISBN 978-3-030-93095-0

ISBN 978-3-030-93096-7 (eBook)

<https://doi.org/10.1007/978-3-030-93096-7>

© The Editor(s) (if applicable) and The Author(s), under exclusive license to Springer Nature Switzerland AG 2022

This work is subject to copyright. All rights are solely and exclusively licensed by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors, and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Switzerland AG.
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Acknowledgment

The editors graciously acknowledge Dr. Jill Korbin and Dr. Richard Krugman. Thank you for your support and encouragement to complete this book. Your work inspired our interest and passion in understanding the role of neighborhoods in child maltreatment.

Contents

1	Communities' Essential Role in Protecting Children from Maltreatment	1
	Carmit Katz and Kathryn Maguire-Jack	
2	The Spatio-temporal Epidemiology of Child Maltreatment: Using Bayesian Hierarchical Models to Assess Neighborhood Influences	9
	Miriam Marco, Antonio López-Quílez, Enrique Gracia, and Kathryn Maguire-Jack	
3	The Impact of Place-Based Services on Child Maltreatment: Evaluation Through Big Data Linkage and Analytics	31
	Ilan Katz, Judy Rose, Samantha Low-Choy, and Ross Homel	
4	Racism and the Racialization of U.S. Neighborhoods: Impacts on Child Maltreatment and Child Maltreatment Reporting	51
	Kristen A. Berg, Claudia J. Coulton, and Adam T. Perzynski	
5	Culture, Religion, and Spirituality in Understanding Child Maltreatment: Perceptions of Parents and Professionals in the Ultra-Orthodox Community	65
	Yochay Nadan, Dafna Tener, Netanel Gemara, Nili Rozenfeld-Tzafar, and Maggi Sharabani	
6	Structural Inequalities, Neighbourhoods and Protecting Children	81
	Will Mason, Brid Featherstone, and Paul Bywaters	
7	Measuring Informal Social Control in Child Maltreatment: From “Whether” to “How,” from One-Off to Sustained, from Individual to Community	101
	Clifton R. Emery and Alhassan Abdullah	

8 Neighborhood Effects on Child Maltreatment in Rural Areas 117
Kathryn Maguire-Jack, Brooke Jespersen, Jill E. Korbin,
Derek Van Berkel, and James C. Spilsbury

**9 Community Interventions for Preventing Child Abuse
and Neglect: Lessons for Expansion 131**
Daphna Gross-Manos and Ayala Cohen

**10 Communities' Lockdown and the Challenge of Keeping Children
Safe: What Have We Learned from the COVID-19 Pandemic? . . . 155**
Carmit Katz and Noa Cohen

11 Neighborhoods and Child Maltreatment: Looking to the Future . . . 173
Kathryn Maguire-Jack and Carmit Katz

Chapter 1

Communities' Essential Role in Protecting Children from Maltreatment



Carmit Katz and Kathryn Maguire-Jack

1.1 Background

In 1988, the U.S. Child Abuse Prevention, and Treatment Act created an Advisory Board in relation to child abuse and neglect. This Advisory Board was intended to evaluate the implementation of the Act and provide recommendations regarding possible improvements to the executive and legislative branches. Despite prior recognition of issues related to the U.S. child protection system, reports from the Advisory Board brought about a national focus that went beyond traditional prevention methods to include a community-based approach as part of the first step in child maltreatment prevention.

To tackle the national emergency and provide background for the recommendations, the Advisory Board described the existing and ongoing gaps that needed to be addressed in redesigning the child protection system:

The most serious shortcoming of the nation's system of intervention on behalf of children is that it depends upon a reporting and response process that has punitive connotations, and requires massive resources dedicated to the investigation of allegations. State and County child welfare programs have *not* been designed to get immediate help to families based on voluntary requests for assistance. As a result, it has become far easier to pick up the telephone to report one's neighbor for child abuse than it is for that neighbor to pick up the telephone to request and receive help before the abuse happens (U.S. ABCAN 1993, p. 80).

Hence, the system in place to protect children is feared by the families who need support, due to the potential for accusations and allegations of abuse. As the focus of

C. Katz (✉)

The Bob Shapell School of Social Work, Tel Aviv University, Tel Aviv, Israel

K. Maguire-Jack

School of Social Work, University of Michigan, Ann Arbor, MI, USA

e-mail: kmjack@umich.edu

child protection services is on investigations of abuse, it thereby weakens the sense of personal and community responsibility to aid neighbors in need. Hence, the responsibility of neighborly support has shifted from helping directly in times of distress to keeping distance and reporting suspected child maltreatment to the authorities. Consequently, child protection resources have been redirected to law enforcement, further minimizing the help that was available for families.

The third report of the US Advisory Board advocated for a child-centered, neighbors helping neighbors child protection system. In this way, “all American adults. . . resolve to be good neighbors—to know, watch, and support their neighbors’ children and to offer help when needed to their neighbors’ families” (U.-S. ABCAN 1993, p. 82). The report detailed a five-point strategy to accomplish this: (a) strengthening neighborhoods as places to encourage child development and family life; (b) reorienting services to focus on child maltreatment prevention and promotion of family well-being; (c) improving government involvement in child protection (e.g., developing comprehensive plans for child protection; restructuring the financing of government services to facilitate integration); (d) reshaping societal values that may contribute to CM; and (e) generating knowledge to encourage comprehensive community efforts to prevent child maltreatment. A series of commissioned papers partly informed the Advisory Board’s recommendation (in the edited volumes Melton and Barry 1994; Melton et al. 2002) were conducted by researchers who highlighted the need for a broader approach to child maltreatment prevention (e.g., Belsky 1980; Garbarino and Kostelny 1992) and the understanding that neighborhood characteristics and chronic poverty have significant roles in the causes of child maltreatment.

1.2 Neighborhoods and Child Maltreatment

As mentioned, neighborhood factors have been found to play a vital role in ensuring children’s safety. However, this responsibility becomes increasingly difficult when families are confronted with continuous stressors as well as a lack of social and economic resources. Previous studies found several neighborhood-level factors related to children’s safety and well-being (e.g., Leventhal and Brooks-Gunn 2000; Ross and Mirowsky 2009; Sampson et al. 2002), which are characterized as either *structure-* or *process-oriented*. The structure-oriented category includes aspects such as the number of single-parent households and households living in poverty. The process-oriented category includes elements such as collective efficacy (Sampson 2003; Sampson and Morenoff 2004; Sampson et al. 1997), social capital (Coleman 1988; Putnam 2001), and neighborhood cohesion (Coulton et al. 2007; Silk et al. 2004). Both orientations have been linked to outcomes for children including health (e.g., Browning and Cagney 2003) and youth development (e.g., Leventhal and Brooks-Gunn 2004), as well as safety and well-being. Furthermore, parental efficacy (Furstenberg et al. 1999) and utilization of effective parenting strategies (Leventhal and Brooks-Gunn 2000; Simons et al. 1997) have also been

found to relate to neighborhood factors. For example, studies have found that parents could better care for their children when they had access to social supports (e.g., emotional, financial, in-kind assistance; Marra et al. 2009; Priel and Besser 2002). In line with this, the impact of neighborhoods on children's safety is a topic that has been gaining attention in recent years (for reviews, see Coulton et al. 2007; Maguire-Jack 2014). As stated by Daro and Dodge (2009):

...attention has shifted from directly improving the skills of parents to creating environments that facilitate a parent's ability to do the right thing. It is increasingly recognized that environmental forces can overwhelm even well-intended parents, communities can support parents in their role, and public expenditures might be most cost-beneficial if directed toward community strategies (p. 68).

Collective efficacy is another area of interest for researchers due to its potential effect on outcomes for children. It has been noted that members' beliefs in their joint ability to problem solve as a group plays a role in building strength within a community (Bandura 1995). Collective efficacy comes from social disorganization theory (Shaw and McKay 1942; Wilson 1987). This theory asserts that communities with residential instability, low economic status, and ethnic/racial heterogeneity have high distress and do not have the necessary resources to prevent neighborhood crime. However, in areas with high levels of collective efficacy, lower rates of violence were found, despite the neighborhood being considered disadvantaged (Sampson et al. 1997).

The examination of whether there is a relationship between collective efficacy and child maltreatment has been the topic of several studies (e.g., Emery et al. 2015; Freisthler 2004; Guterman et al. 2009; Kim and Maguire-Jack 2015; Molnar et al. 2016; Sabol et al. 2004). One study of 3356 mothers from 20 U.S. cities found that perceived collective efficacy was negatively associated with psychological and physical aggression (Guterman et al. 2009). In another study, Molnar et al. (2016) looked at survey and administrative data from 1995 to 2005 from Chicago, Illinois. Their results showed that neighborhoods with a higher collective efficacy had lower rates of physical and sexual abuse and neglect than neighborhoods with lower scores.

Generalizing from crime to child maltreatment in regard to neighborhood safety relates to findings that in socially cohesive neighborhoods, parents are better able to care for their children, thereby decreasing the likelihood of maltreatment. In Furstenberg's (1993) study, parents were more prone to partake in effective caregiving roles when they lived in communities that saw raising children as a collective responsibility. Furthermore, Benson et al. (1998) found that healthy communities built internal relationships that accentuated support, opportunity, and a shared commitment to encouraging the healthy development of children and youth.

In addition, individual factors play an essential role in the etiology of child maltreatment. Namely, this refers to psychological aspects (e.g., parental depression; perceived efficacy of parents as individuals, family members, and community members), which are also closely tied to social and economic variables (Pelton 1994). An example of this was found in one study where family support in moderate-

to high-violence neighborhoods was shown to reduce the risk of child maltreatment by decreasing parents' vulnerability to depression (Martin et al. 2012).

Based on previous evidence, the Advisory Board theorized that an effective child protection system should be integrated into daily life. Meaning that child protection services should be present in the places where families live, work, study, worship, and play. In this way, the needs of families and children are seen in real-time and there is a greater ability to respond immediately, reciprocally, and practically. Moreover, incorporating reciprocal help into individuals' and families' everyday lives would help "normalize" receiving assistance and reaching out to child protection services. This would result in both minimizing stigmas and maximizing the usefulness and generalizability of such services (for reviews of the nature and effectiveness of informal social support, see Limber and Hashima 2002; Thompson 1994; for mutual assistance, including "self-help" groups, see Murphy-Berman and Melton 2002).

The Advisory Board also further identified key components of normalizing assistance, specifically, by making it universal and inclusive. This means ensuring the inclusion of high-resource families, which would increase the availability of resources in a reciprocal system. Furthermore, there is an observed trend in most industrialized societies that all families, regardless of resource access, are becoming progressively more isolated. Even resource-rich families may lack support during times of crisis (e.g., parental illness). It is also imperative for a system of this kind to provide an inclusive environment for families who are often considered outsiders. For instance, although adult offenders are often removed from their communities due to their conduct, this punishment should not be put upon their children. The children and those caring for them during and after their parents' incarceration should be able to remain within the community safety net. This should also be extended to others who might otherwise not be fully included or integrated into communities, such as new immigrants and ethnic minorities.

Although strongly embedded in empirical studies, the idea of communities playing an essential role in the protection of children from maltreatment has had less visibility in policy and practice. Even before the onset of the COVID-19 pandemic, most of the efforts in the field of child maltreatment were dedicated to the parent-child dyad with considerably fewer resources targeting the communities in which these children and families live (Katz et al. 2019).

1.3 An Orientation to This Book

Given the importance of neighborhoods and communities to the lives of children and families, this book spotlights advances in knowledge with respect to neighborhoods, communities and child maltreatment, in order to advance future research and policy worldwide. The chapters that follow are comprised of a variety of topics related to understanding communities and child maltreatment. Specifically, in Chap. 2, Miriam Marco, Antonio López-Quílez, Enrique Gracia, and Kathryn Maguire-Jack review

advanced methods for studying neighborhoods and maltreatment. Ilan Katz, Judy Rose, Sama Low-Choy and Ross Homel identify methods for evaluating effects on maltreatment in place-based initiatives in Chap. 3. In Chap. 4, Adam Perzynski, Kristen Berg, and Claudia Coulton examine the changing construct of neighborhoods and how their importance has changed over time. Yochay Nadan, Dafna Tener, Netanel Gemara, and Nili Rozenfeld-Tzafar and Maggi Sharabani uncover culture and religion as important concepts of community in understanding maltreatment among an ultra-orthodox community in Chap. 5. In Chap. 6, Will Mason, Brid Featherstone and Paul Bywaters explore concentrated disadvantage and child maltreatment by examining the in-depth lived experiences of parents living in neighborhoods characterized by high levels of structural disadvantage. Clifton Emery and Alhassan Abdullah examine the measurement of informal social control and offer innovative solutions for measuring this neighborhood process in relation to family violence in Chap. 7. In Chap. 8, Kathryn Maguire-Jack, Brooke Jespersen, and Jill Korbin, Derek VanBerkel, and James Spilsbury pinpoint the urban bias within neighborhood-based research and delve into the transferability of these findings to rural areas. Daphna Gross Manos and Ayala Cohen summarize neighborhood-based programs designed to prevent child maltreatment in Chap. 9. In Chap. 10, Noa Cohen and Carmit Katz analyze the unique ways in which the COVID-19 pandemic has influenced the relationship between communities and child maltreatment. Finally, in Chap. 11, Kathryn Maguire-Jack and Carmit Katz conclude by assessing next steps for research and policy related to neighborhoods and child maltreatment.

References

- Bandura, A. (1995). Exercise of personal and collective efficacy in changing societies. *Self-efficacy in changing societies*, 15, 334.
- Belsky, J. (1980). Child maltreatment: An ecological integration. *American Psychologist*, 35(4), 320.
- Benson, P. L., Leffert, N., Scales, P. C., & Blyth, D. A. (1998). Beyond the “village” rhetoric: Creating healthy communities for children and adolescents. *Applied Developmental Science*, 2, 138–159.
- Browning, C. R., & Cagney, K. A. (2003). Moving beyond poverty: Neighborhood structure, social processes, and health. *Journal of Health and Social Behavior*, 44, 552–571.
- Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94, S95–S120.
- Coulton, C. J., Crampton, D. S., Irwin, M., Spilsbury, J. C., & Korbin, J. E. (2007). How neighborhoods influence child maltreatment: A review of the literature and alternative pathways. *Child Abuse & Neglect*, 31(11–12), 1117–1142.
- Daro, D., & Dodge, K. A. (2009). Creating community responsibility for child protection possibilities and challenges. *The Future of Children*, 19(20), 67–93.
- Emery, C. R., Trung, H. N., & Wu, S. (2015). Neighborhood informal social control and child maltreatment: A comparison of protective and punitive approaches. *Child Abuse & Neglect*, 41, 158–169.
- Freisthler, B. (2004). A spatial analysis of social disorganization, alcohol access, and rates of child maltreatment in neighborhoods. *Children and Youth Services Review*, 26(9), 803–819.

- Furstenberg, F. F. (1993). How families manage risk and opportunity in dangerous neighborhoods. In W. J. Wilson (Ed.), *Sociology and the public agenda* (pp. 231–258). Sage.
- Furstenberg, F. F., Jr., Cook, T. D., Eccles, J., Elder, G. H., Jr., & Sameroff, A. (Eds.). (1999). *Managing to make it: Urban families and adolescent success*. University of Chicago Press.
- Garbarino, J., & Kostelny, K. (1992). Child maltreatment as a community problem. *Child Abuse & Neglect*, 16(4), 455–464.
- Guterman, N. B., Lee, S. J., Taylor, C. A., & Rathouz, P. J. (2009). Parental perceptions of neighborhood processes, stress, personal control, and risk for physical child abuse and neglect. *Child Abuse & Neglect*, 33, 897–906.
- Katz, C., McLeigh, J., & Arieh, A. B. (2019). *Reflections on the traditional role of social workers in child protection: Lessons learned from the Strong Communities initiative in Israel*.
- Kim, B., & Maguire-Jack, K. (2015). Community interaction and child maltreatment. *Child Abuse & Neglect*, 41, 146–157.
- Leventhal, T., & Brooks-Gunn, J. (2000). The neighborhoods they live in: The effects of neighborhood resident upon child and adolescent outcomes. *Psychological Bulletin*, 126, 309–337.
- Leventhal, T., & Brooks-Gunn, J. (2004). Diversity in developmental trajectories across adolescence: Neighborhood influences. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (pp. 451–486). Wiley.
- Limber, S. P., & Hashima, P. Y. (2002). *The social context: What comes naturally in child protection*.
- Maguire-Jack, K. (2014). Multilevel investigation into the community context of child maltreatment. *Journal of Aggression, Maltreatment, and Trauma*, 23(3), 229–248.
- Marra, J. V., McCarthy, E., Lin, H. J., Ford, J., Rodis, E., & Frisman, L. K. (2009). Effects of social support and conflict on parenting among homeless mothers. *American Journal of Orthopsychiatry*, 79, 348–356.
- Martin, A., Gardner, M., & Brooks-Gunn, J. (2012). The mediated and moderated effects of family support on child maltreatment. *Journal of Family Issues*, 33(7), 920–941.
- Melton, G. B., & Barry, F. D. (Eds.). (1994). *Protecting children from abuse and neglect: Foundations for a new national strategy* (p. 131). Guilford Press.
- Melton, G. B., Thompson, R. A., & Small, M. A. (2002). *Toward a child-centered, neighborhood-based child protection system: A report of the consortium on children, families, and the law*. Praeger Publishers/Greenwood Publishing Group.
- Molnar, B. E., Goerge, R. M., Gilsanz, P., Hill, A., Subramanian, S. V., Holton, J. K., Duncan, D. T., Beatriz, E. D., & Beardslee, W. R. (2016). Neighborhood-level social processes and substantiated cases of child maltreatment. *Child Abuse & Neglect*, 51, 41–53.
- Murphy-Berman, V., & Melton, G. B. (2002). *The self-help movement and neighborhood support for troubled families*.
- Pelton, L. H. (1994). *The role of material factors in child abuse and neglect*.
- Priel, B., & Besser, A. (2002). Perceptions of early relationships during the transition to motherhood: The mediating role of social support. *Infant Mental Health Journal*, 23, 343–360.
- Putnam, R. (2001). Social capital: Measurement and consequences. *Canadian Journal of Policy Research*, 2(1), 41–51.
- Ross, C., & Mirowsky, J. (2009). Neighborhood disorder, subjective alienation, and Distress. *Journal of Health and Social Behavior*, 50, 49–64.
- Sabol, W., Coulton, C., & Polousky, E. (2004). Measuring child maltreatment risk in communities: A life table approach. *Child Abuse & Neglect*, 28(9), 967–983.
- Sampson, R. J. (2003). The neighborhood context of well-being. *Perspectives in Biology and Medicine*, 46, 53–64.
- Sampson, R. J., & Morenoff, J. D. (2004). Spatial (dis)advantage and homicide in Chicago neighborhoods. In M. Goodchild & D. Janelle (Eds.), *Spatially integrated social science* (pp. 145–170). Oxford University Press.
- Sampson, R. J., Morenoff, J. D., & Gannon-Rowley, T. (2002). Assessing ‘neighborhood effects’: Social processes and new directions in research. *Annual Review of Sociology*, 28, 443–478.

- Sampson, R. J., Raudenbush, S. W., & Earls, R. F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science*, 277, 918–924.
- Shaw, C. R., & McKay, H. D. (1942). *Juvenile delinquency and urban areas: A study of rates of delinquents in relation to differential characteristics of local communities in American cities*. University of Chicago Press.
- Silk, J. S., Sessa, F. M., Sheffield, M. A., Steinberg, L., & Avenevoli, S. (2004). Neighborhood cohesion as a buffer against hostile maternal parenting. *Journal of Family Psychology*, 18(1), 135–146.
- Simons, R. L., Johnson, C., Conger, R. D., & Lorenz, F. O. (1997). Linking community context to quality of parenting: A study of rural families. *Rural Sociology*, 62, 207–230.
- Thompson, R. A. (1994). *Social support and the prevention of child maltreatment*.
- U.S. Advisory Board on Child Abuse and Neglect [U.S. ABCAN]. (1993). *Neighbors helping neighbors: A new national strategy for the protection of children*. U.S. Government Printing Office.
- Wilson, W. J. (1987). *The truly disadvantaged*. University of Chicago.

Chapter 2

The Spatio-temporal Epidemiology of Child Maltreatment: Using Bayesian Hierarchical Models to Assess Neighborhood Influences



Miriam Marco , Antonio López-Quílez , Enrique Gracia ,
and Kathryn Maguire-Jack 

2.1 Spatio-temporals Models in the Study of Social Problems: A Brief Landscape

2.1.1 *Origins of Spatial and Spatio-temporal Models*

The history and development of spatio-temporal approaches spans epidemiology, public health, and disease mapping disciplines (Lawson 2018; Waller and Gotway 2004). The first research sought to evaluate the geographical or spatial variations of health-related outcomes, examine risk maps, and analyze the characteristics of the environment that influence diseases such as cancer or infectious diseases (Elliot et al. 2000; Mollie and Richardson 1991). Some of these studies based on environmental exposures such as pollution, lead or NO₂ (Biggeri et al. 1996), while others focused on social and spatial inequalities in health issues such as poverty or migration (MacKinnon et al. 2007).

The main characteristic of spatial models is that they examine a geocoded outcome, in which its spatial placement is considered relevant to explain and understand the phenomenon. Thus, they are linked to ecological models, which study the interrelationships of outcomes and their environment, and suggest that the context (for example, the neighborhood where the outcome takes place) has an important influence beyond the individual characteristics (Waller and Gotway 2004).

M. Marco (✉) · E. Gracia

Department of Social Psychology, University of Valencia, Valencia, Spain

e-mail: miriam.marco2@uv.es

A. López-Quílez

Department of Statistics and Operational Research, University of Valencia, Burjassot, Spain

K. Maguire-Jack

School of Social Work, University of Michigan, Ann Arbor, MI, USA

Space-time studies are a more complex approach to spatial models. When data have a geographic component and are collected over different time periods, it is necessary to conduct a spatio-temporal data analysis. These models analyze the spatial distribution and spatial correlates of an outcome, as well as examine whether it changes or maintain the same spatial patterns and contextual influences over time. For example, it may be interesting to measure the temporal evolution of influenza in space to calculate the risk of new cases in the future and to provide health services with statistical tools to control the epidemic (Amorós et al. 2020).

2.1.2 Spatio-temporal Models and Social Problems

Although their origin and development took place in medicine and health studies, spatio-temporal models are increasingly used for the study of social problems. Some theoretical approaches, such as social disorganization theory (Shaw and McKay 1942), have highlighted the importance of context beyond individual characteristics, and spatial and spatio-temporal models represents an advanced methodological approach to evaluate these influences on social outcomes.

Particularly relevant is the study of the spatio-temporal distribution of crime (Law and Quick 2013; Law et al. 2014; Matthews et al. 2010; Sparks 2011). This research has been used to evaluate the hotspots and spatial influences in different types of crime, among which violent crime and homicides, vehicle crashes, drug-related outcomes, burglary, or juvenile delinquency stand out (Groff et al. 2009; Haining et al. 2009; Law et al. 2014; Matthews et al. 2010; Sparks 2011). These studies focus on the prediction of crime, detecting clusters of conflict areas and how they have moved over time to study future cases.

Other problems have been incorporated into this line of research. There are currently studies that assess the spatio-temporal distribution of outcomes such as drug-related problems (Lum 2008; Marco et al. 2017a, b), intimate partner violence (Cunradi et al. 2011; Gracia et al. 2015, 2021), suicide (Congdon 2011; Helbich et al. 2017; Marco et al. 2018), and child abuse and neglect (Barboza 2019; Freisthler and Weiss 2008; Gracia et al. 2017).

2.2 Modeling Spatial Influences in the Study of Child Maltreatment

2.2.1 Why Measure Spatial Structure?

Child maltreatment is a complex phenomenon that must be considered beyond individual and relational factors to include the broader social context (Garbarino 1977). Among those factors related to social context that have received the most

attention, research has highlighted the neighborhoods where families reside. Analyzing the relationships between neighborhood characteristics and the risk of child maltreatment and the likelihood of a child or a family to be involved in Child Protective Services (CPS) has a long tradition dating back to the pioneering research carried out by Garbarino and his colleagues (Garbarino and Sherman 1980). Starting from these studies, more recent research has linked the structural and demographic characteristics of neighborhoods (mainly impoverishment and social disorganization) with risk of child maltreatment (Coulton et al. 2007; Freisthler et al. 2006; Maguire-Jack 2014; Sampson et al. 1997). This body of research concludes that ‘place’ and its characteristics are significant to explain the variations in the risk of child maltreatment.

Many studies that have analyzed neighborhood influences on child maltreatment have focused on multilevel models, such as hierarchical linear modeling (Coulton et al. 2007; Freisthler et al. 2006; Maguire-Jack 2014). These studies have provided important results by mixing individual and contextual risk factors, confirming that both are relevant and complementary, and suggesting some contextual characteristics are related to child abuse (Coulton et al. 2007). While multilevel models allow for estimating an individual’s likelihood of maltreating based on aspects of the neighborhood and control for clustering of individuals within neighborhoods, these models do not capture the spatial element, and do not allow mapping the spatial risk (Coulton et al. 2007).

Spatial and spatio-temporal modeling are advanced methodologies to analyze spatial structures in child abuse and neglect and assess specific spatial risks that could guide community prevention policies and provide complementary scientific evidence to the study of the ecology of child maltreatment. Specifically, the approach allows for mapping area-specific risk estimates and can contribute to planning and evaluating prevention strategies of formal social agencies including CPS, the City Council, or the Municipal Police Department. Assessing the areas where there is a greater risk of child maltreatment can be very useful to guide local actions, make a better distribution and management of resources, and develop preventive strategies for neighborhoods with greater risk (Gracia et al. 2015). In addition, the approach allows for analyzing neighborhoods where risk has increased or decreased in recent years and exploring the neighborhood-level covariates that could explain those changes over time. This information can provide a high-quality quantitative approach for evaluating the impact of preventive strategies. This approach may be used to detect and map whether maltreatment risk is reduced when different prevention and intervention policies have been implemented.

2.2.2 The Selection of Study Area: A Complex Issue

One of the key elements when conducting a spatial study is to select the most appropriate study area. There are different possibilities, ranging from a large area such as a country, to a small area, such as the street number. In between, we find a