FEATURED INTERVIEW

LONGSCAN: The Complexity and Trajectories of Child Maltreatment

An Interview with Dr. Desmond Runyan; Conducted by James McCarroll, Ph.D.

Interview with Desmond K. Runyan, MD, DrPH.

Dr. Runyan is Professor and Chair of Social Medicine and Professor of Pediatrics and Epidemiology at the University of North Carolina at Chapel Hill. Dr. Runyan is the Director of the Longitudinal Study of Child Abuse and Neglect (the LONGSCAN) Coordinating Center. The LONGSCAN project is a 20-year study of the impact of child maltreatment, now in its 19th year. The Center coordinates the five different, but overlapping longitudinal studies in the U.S. [Editor's note: At the end of this interview is a note about the other LONGSCAN investigators.] Dr. Runyan's work involves the application of clinical epidemiology to the problem of violence against children. His research has focused on the impact of societal intervention on the mental health functioning of the child victims and the impact of the foster care system, court testimony, and the medical examination on children.

Dr. McCarroll: As one of the principal investigators of the LONGSCAN (Runyan & Litrownik, 2003), an invaluable landmark study, what have been the major topics of interest to your group?

Dr Runyan: First, we have looked at the antecedents and consequences of abuse over time. Secondly, we have been involved in developing a set of statistical growth modeling procedures to look at trajectories of the effects of maltreatment. Are the children who were abused early the same kids that continue to be abused? Does most of the risk happen to a smaller group of kids? Are there kids who have a lot of maltreatment early and then nothing later on, and another group of kids who were doing pretty well early on and then get maltreated later? A third set of questions is related to fathers and the role...

In This Issue

As part of our gaining new knowledge to support U.S. Army families, we often turn to civilian knowledge and databases to model our population. This issue is devoted to the Longitudinal Study of Child Abuse and Neglect (LONGSCAN) studies, a consortium of five sites conducting research on child maltreatment. The project was initiated in 1990 with grants from the National Center on Child Abuse and Neglect. Our featured interview is with Dr. Desmond Runyan, Director of the LONGSCAN Coordinating Center. We also include a brief review of the history and some highlights of the LONGSCAN. Our Building Bridges to Research describes some of the methods used in their analyses. Websites of interest directs the reader to the LONGSCAN website as well to the National Data Archive of Child Abuse and Neglect (NDACAN) at Cornell University where the public use LONGSCAN data sets are archived and updated. As always, we hope that JFJF continues to inform and enhance your work with our nation’s service members and their families.

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they play. A fourth set is focused on social capital. An example is related to the impact of kids’ psychological development and later school completion and work history.

**Dr. McCarroll: How did you arrive at your classifications of the types of maltreatment?**

Dr Runyan: We re-coded all the Department of Social Services (DSS) records using the system we developed for LONGSCAN, the Modified Maltreatment Classification System (MMCS), as opposed to taking DSS codes because there was a fair amount of disagreement. Dr. McCarroll: In your classification of maltreatment, what did you find in the DSS records on the histories of maltreatment?

Dr Runyan: That is one of the issues we are wrestling with. The May 2005 edition of *Child Abuse and Neglect* [Volume 29, Number 5] was devoted to the LONGSCAN and included measurement issues. So much of the literature just lumps abused kids together and compares them to non-abused kids. We have DSS records of all different kinds of things over time for each of them, but also at age 12, 14, 16, and 18 we have asked the kids about their own experiences. It turns out that for many of the kids who told us they were sexually abused, the authorities had no idea they had been sexually abused. The other group that is a little harder to understand is the group of kids where social services said they were sexually abused, but the kids said, no, they were not. So, there is that lack of concordance. Overall, the concordance figures look pretty high because most kids were not sexually abused and neither they nor DSS said so (Runyan, Cox, Dubowitz, et al., 2005). It is really intriguing to think about the kids who were abused and were not telling anybody about it or only told us about it.

**Dr. McCarroll: The Army only codes sexual abuse as severe. Are you making finer distinctions of sexual abuse?**

Dr Runyan: That is an interesting question. A lot of people have published about how sexual abuse is the most destructive of the different forms of abuse. That is not what we found. So much of the impact of sexual abuse is determined not by the sexual abuse itself, but by the response of the people around them, particularly the mother. It gets hard to sort out and decide, “Well, this is worse than this.” For some kids, being fondled or having to cope with an exhibitionist is incredibly tough for them. The traditional response is adult horror at child sexual involvement, which I share, but at the same time, what I think is salient and horrific about sexual abuse may not be shared by the kids who are the victims when we are trying to look at outcomes.

**Dr. McCarroll: That is terribly complex. Is this true in any other type of maltreatment?**

Dr Runyan: I am currently looking at the kids’ mental health functioning at different ages to see which of the forms of exposure to violence or maltreatment is most salient in terms of its impact on later depression, anxiety, or aggression.
The long-term effects of the maltreatment of children are among the most persistent and difficult questions to answer in the child maltreatment arena. With the Longitudinal Study of Child Abuse and Neglect (LONGSCAN), Dr. Runyan and colleagues have undertaken a series of studies to answer these questions. In 1990, the Office of Child Abuse and Neglect (then the National Center on Child Abuse and Neglect) committed funds for the LONGSCAN (Runyan & Litrownik, 2003). This project is a consortium of five independent prospective studies designed to examine the long-term consequences of child abuse and neglect (Runyan et al., 1998). The five sites are widely distributed across the United States: Eastern, Southern, Midwest, Southwest, and Northwest.

Children enrolled in the study were recruited at four years of age or younger. The samples include maltreated and non-maltreated children, children at high risk of maltreatment, and children placed in foster care. The goal of LONGSCAN is to follow the approximately 1,300 children and their families until the children become young adults. Maltreatment data are collected from multiple sources. Children and their caregivers have been regularly assessed at approximately 2-year intervals using face-to-face interviews and standardized instruments, some of which were created for this study. Yearly telephone interviews are also conducted on a subset of the study population incorporating factors at the child, parent, family, neighborhood, and larger community levels. Data collected at each interval include exposure to maltreatment, age-specific potential risk and protective factors, and age-appropriate outcomes such as the domains of mental health, behavior, social functioning, school, and employment.

Ecological-developmental theory (Belsky, 1980; Bronfenbrenner, 1977) has been the basis for the selection of research questions, measurement, and analyses. This theory is based on the knowledge that children’s response to maltreatment and intervention varies by age, developmental level, and the context of the maltreatment. In addition to ecological-developmental theory, a social-developmental model (Catalano & Hawkins, 1996) is a complementary framework for the investigations. This model hypothesizes that interactions with others mediate the influences of individual and social factors on outcomes.

The findings of LONGSCAN will provide a scientific basis for policy-making, program planning, and targeting service delivery by increasing our understanding of the following:

- The child, family, and community factors which increase the risk for maltreatment in its different forms;
- The differential consequences of maltreatment, depending upon its timing, duration, severity, and nature, and upon the child’s age and cultural environment;
- The child, family, and community factors (e.g., chronic exposure to violence, parental substance abuse) that increase the harm (measured by age-appropriate negative outcomes) caused by different forms of maltreatment;
- The factors that increase the probability of positive child outcomes despite maltreatment and other adverse life circumstances;
- The strengths and weaknesses of various societal interventions such as child welfare programs, foster care, mental health services, parenting classes, etc. Some of the sites are involved in intervention research and evaluation of services, expediting the integration of research findings into policy and practice.

The LONGSCAN investigators and others who have used the datasets have produced a large volume of publications. Many of these are available on the LONGSCAN website. [Editor’s note: See websites of interest.] Two recent publications focus on the importance of early childhood maltreatment, one on later aggression (Kotch, Lewis, Hussey, et al., 2008) and on adolescent sexual behavior (Black, Oberlander, Lewis, et al., 2009). Early childhood neglect (birth to age 2 years) predicted child aggression scores at ages 4, 6, and 8 years (Kotch, Lewis, Hussey, et al., 2008). Boys had higher aggression scores than girls, younger children had higher scores than older children, and more caregiver depressive symptoms were associated with higher aggression scores. Surprisingly, early abuse, later abuse and later neglect did not predict later aggression at later ages beyond 8.
The authors noted that the effects of juvenile violence are a serious concern, and on a worldwide basis. The authors have shown that neglect may have profound and long-lasting effects on the child, especially if it occurs early in development.

The relationship of childhood maltreatment to adolescent sexual behavior is an important public health question. Analyses of the LONGSCAN found that all types of childhood maltreatment predicted adolescent engagement in sexual intercourse (Black, Oberlander, Lewis, et al., 2009). Emotional distress, as measured by the Trauma Symptom Checklist (Briere, 1996), mediated the relationship between maltreatment and sexual intercourse at age 14, but not at age 16. The authors concluded that maltreated children are at risk for early sexual behavior, but by age 16, other factors account for it.

Many publications from the LONGSCAN include descriptions of the relationship of maltreatment to various health and social outcomes. Other studies include the risks for child maltreatment in different environments, ethical issues, costs and other economic issues, parenting and caretaking, development, foster care, prevention, type of maltreatment, long-term outcomes and many others. This very comprehensive effort to collect longitudinal data across a variety of domains will provide child maltreatment researchers with much material for analysis and study over many years to come.

References


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At age 8, it looks like witnessing domestic violence is far more destructive for kids’ mental health than either sexual abuse or physical abuse; there was no relationship between neglect and depression and anxiety. When we repeated the same analysis with the kids at age 12, psychological maltreatment was the most destructive for the kids. In a sense, all abuse is psychological maltreatment. When an eight year old kid or younger is exposed to domestic violence, I think that is actually a form of psychological maltreatment. The person who protects you from the world and is your rock is not safe herself. There is a lot more work to be done on refining the definition and measurement of psychological abuse, but it does seem to be promising.

Dr. McCarroll: How did you categorize neglect?

Dr Runyan: Our system has two categories of neglect: failure to provide and failure to supervise. But, even those two categories may not capture all that we want. At this point we are not actually seeing a lot of adverse impact from neglect but, the lack of precision of measuring is part of the complexity. We are looking at parental monitoring and trying to measure family functioning, such as unreasonable parental expectations, in an attempt to find ways to improve the definition of neglect.

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Joining Forces/Joining Families

Over the past several years, Joining Forces Joining Families has provided basic statistical knowledge to readers. The purpose of this information is to help readers understand some basic principles of research design and data analysis and to assist them in understanding behavioral science literature of interest to the Army Family Advocacy Program (FAP) community. In some literature, sophisticated statistical techniques are required, particularly in longitudinal research as seen in the LONGSCAN. Longitudinal research incorporates many variables over varying periods of time. The investigator without a statistical background usually will consult a statistician for guidance on model selection and interpretation of the results. In this article, we note two of the statistical models that can be used to examine longitudinal data and provide some basic information on why and how they were used in the LONGSCAN.

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The LONGSCAN and its databases provide the opportunity to examine the effects of child maltreatment over time. Longitudinal analysis requires measuring the individuals at multiple time points. Some variables may be predictors, such as age and type of maltreatment; some may be outcomes, such as school performance; others such as parent’s income, parent and child gender and race may be predictors, mediators, or outcomes or also may be statistically controlled (held constant), depending on the analysis.

In experimental studies, variables can be controlled by many methods such as selecting participants, randomly assigning them to treatment and non-treatment groups and other methods. Experimental control allows the investigator to examine the direct effect of a variable (or variables) of interest on one or more outcomes. When data are collected in a naturalistic setting, such as in the LONGSAN, such experimental control is not possible. In such cases, the investigator will use statistical control in order to hold variables constant. Holding a variable constant, whether through experimental or statistical control, is how the investigator can come to conclusions about the research and make statements (with appropriate qualification of the limitations of the methods) about the results. Control is the method used to reduce biases due to multiple effects of different variables acting at the same time on the outcome.

Kotch, Lewis, Hussey et al. (2008) described the statistical model they used to predict aggressive behavior scores in children who had been subjected to early (birth to 2 years) childhood neglect. The model used was a general, linear, mixed model. The dependent variable (the outcome you are trying to understand) was aggression at ages 4, 6, and 8, as measured by the Child Behavior Checklist (Achenbach, 1991) completed by the caregiver at the age for which the child and parent were assessed. There were 12 control variables (covariates): child gender, race/ethnicity, age, caregiver marital status, depression, years of education, family income, neighborhood safety, early neglect, early abuse, later neglect and later abuse. Of the non-maltreatment variables in the model, child gender, child age, caregiver depression, neighborhood safety, and the Midwest study site were all significant predictors of aggression at age 8. Of the maltreatment variables, only early childhood neglect predicted aggression. It was hypothesized that the Midwest site was significant due to selection of the recruitment strategy. However, regardless of the site, the significance of early neglect in predicting aggression was detected. Complex models such as this are increasingly used in behavioral science research and are available in many commercial statistical packages.

In his interview, Dr. Runyan referred to another statistical technique, growth modeling. This statistical technique allows the investigator to examine the trajectory of events following maltreatment. This model allows the investigator to examine effects that are directly and those that are indirectly related to the outcome. In the direct approach, the outcome is not mediated by other intervening variables whereas an indirect effect is mediated by an intermediate (or intervening) variable. Maltreatment is measured first, then possible intervening variables, and then the outcome of

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interest. Such a model is flexible and sophisticated and offers the researcher many advantages over earlier statistical models. However, such models cannot automatically infer causes. The experience and judgment of the investigator are still required.

References

Additional background reference

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Dr. McCarroll: One needs to think about the nuances of childhood and adult maltreatment.
Dr Runyan: That is right. When we looked at measurement we ended up sorting out severity, type and the chronicity. Did it happen lifelong or was it episodic? Was it at one point? Did it happen early in life or later in life? All those seemed to lead to different outcomes.

Dr. McCarroll: What kinds of outcome data are you collecting?
Dr Runyan: We collect data in an annual telephone interview with the parents about their contact with social services in the last year. We also ask the parent whether the child has been hospitalized or has been seeing the doctor or other professionals for mental health or special education services. We have completed data collection to age 14 and are not quite done with age 16. We have about 900 14-year olds, 760 16-year olds and 400 18-year olds so far.

Dr. McCarroll: What new data will you present? Is anything being collected at ages 16 and 18 that has not previously appeared?
Dr Runyan: We have gone back and asked about employment and work, school completion, and, at ages 16 and 18, asking the kids for their own self-reports about their maltreatment. The report that will be really useful is at age 18 when we do not have to tell them that we have to share information with social services.

Dr. McCarroll: One of the results that might come out of this is some sense of a life trajectory based particularly on early abuse.
Dr Runyan: That is a topic that we are interested in describing. A lot of people think that kids who are maltreated are going to have a bad outcome. We want to address risk. Right now it looks like about 35% of our kids escape pretty unscathed. About a similar percentage do not escape and are pretty severely affected. The other 30% do not look red hot either. We are excited about looking at the 35% that look really pretty good on all our measures. Were those kids looking pretty good all the way along? Are there kids that looked bad earlier and then that looked better? We are trying to follow those pathways.

Dr. McCarroll: You also have non-maltreated kids, too?
Dr Runyan: Right. However, over the course of the study many of those non-maltreated kids have been maltreated. So, out of the original cohort of 1,354 kids, we have 188 kids who have never had any maltreatment reports.

Dr. McCarroll: What do you think has quick applicability to the maltreatment field? Has anybody picked up on any of your findings to either change their policy or procedures or statutes?
Dr Runyan: I think what is most applicable is the impact of fathers. Even the kids who live in “single families without fathers” have father figures. There is some real applicability to social services, to think more carefully about that. If you just ask the simple demographic question, “Is there a father in the home?” the answer is “No”. When you ask the kids if they have somebody who is like a father, all the kids name somebody. Howard Dubowitz (2006) has published a number of papers on fathers.

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Dr. McCarroll: Have any findings from LONGSCAN surprised you?

Dr Runyan: The first big surprise to me is how little impact we could find for neglect. I was also surprised by the strength of the impact of domestic violence exposure. Our data suggest that it is important for the kids’ own needs that we address that. We really cannot afford to operate separately from the folks who worry about domestic violence. We really need to be working with them.

Dr. McCarroll: Thank you for your work and your leadership on the LONGSCAN study. It will be an important database for researchers and practitioners for years to come.

Dr Runyan: You are welcome.

References


Principal Investigators
The following notes the LONGSCAN principal investigators and the focus of studies at each of the five sites.

Howard Dubowitz, MD, is a Professor of Pediatrics and Director of the Center for Families at the University of Maryland School of Medicine, Baltimore. His site focuses on a cohort of children drawn from three Baltimore pediatric clinics serving children with non-organic failure to thrive, children of drug-abusing or HIV-positive mothers, and low-income, inner-city children. Site-specific objectives of this study are the developmental impact of chronic neglect, the mediating influence of home interventions, and the importance of fathers in children’s adaptive, academic, and social development.

Alan Litrownik, PhD, is Professor of Psychology at San Diego State University. His site focuses on a cohort study of maltreated children who were placed in foster care in the first 18 months of life and followed until age 4. This study will examine kinship vs. non-family foster care, the consequences of re-unification, and the utilization and impact of health care and mental health services.

Richard Thompson, PhD, is the Director of Research for the Juvenile Protective Association in Chicago, IL, and Assistant Professor at the University of Illinois at Chicago. His site focuses on comparing the life course of infants whose families are receiving comprehensive services after a report of child maltreatment to infants of similarly-reported families who have only received follow-up by the state welfare agency and

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Websites of Interest

The LONGSCAN project website is http://www.iprc.unc.edu/longscan/ . This website includes extensive information on this complex project. There are over 500 separate databases for analysis in LONGSCAN, one for each set of measures by age group. The website includes detailed descriptions of the measures, computing information, publications and presentations, and reports to the funding agencies.

The LONGSCAN data bases are for public use under the conditions specified by the investigators. Many different public use data sets are archived at The National Data Archive of Child Abuse and Neglect (NDACAN) at Cornell University (http://www.ndacan.cornell.edu). The NDACAN is a repository for public use data sets from researchers and national data collection efforts. These data sets may be used by investigators for secondary analysis. NDACAN also supports information-sharing through its Child Maltreatment Research List Serve, its e-newsletter, Update, and training opportunities to researchers through conference workshops and its annual Summer Research Institute.

In addition to listing data sets and rules for their use, the website has a number of additional resources such as bibliographies of studies resulting from their datasets, links to agencies promoting child maltreatment research and child welfare, and other useful resources.

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to a control group up of matched infants. This cohort is drawn from among the most violent neighborhoods in Chicago and will examine the differential impact of experiences of child abuse or neglect versus witnessing violence from the time of infancy.

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Statistics Book Available

In 2008 the Family Violence and Trauma Project (FVTP) published Building Bridges (pictured left). This book, a collection of statistics articles from previous Joining Forces Joining Families, presents basic statistical concepts in simple language, with examples. Building Bridges aims to further the professional knowledge of Army Family Advocacy Program personnel. FREE copies are available from the FVTP by contacting John H. Newby, jnewby@usuhs.mil, or James E. McCarroll, jmccarroll@usuhs.mil.