



OJJDP Working for Youth Justice and Safety JUVENILE JUSTICE BULLETIN

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From the Administrator

Congress has directed the Office of Juvenile Justice and Delinquency Prevention (OJJDP) to conduct national incidence studies to determine “the actual number of children reported missing each year, the number of children who are victims of abduction by strangers, the number of children who are the victims of parental kidnappings, and the number of children who are recovered each year.”

This bulletin summarizes findings from the adult survey component of OJJDP’s Third National Incidence Studies of Missing, Abducted, Runaway, and Thrownaway Children (NISMART–3). The authors compare findings from the 2013 NISMART–3 survey of parents and other primary caretakers of children with findings from the 1999 NISMART–2 component. The 2013 survey yielded a number of encouraging findings—the rate of children missing to their caretakers was 32 percent lower than reported in NISMART–2, and the rate of children who were reported missing to police declined 52 percent since the previous study.

NISMART is a crucial component of a larger, comprehensive effort to respond to the issue of America’s missing children. We continue to enhance and improve our endeavors, which brings us closer to realizing our goal of keeping our nation’s children safe.

Eileen M. Garry
Acting Administrator

National Estimates of Missing Children: Updated Findings From a Survey of Parents and Other Primary Caretakers

Andrea J. Sedlak, David Finkelhor, and J. Michael Brick

Highlights

This bulletin summarizes findings from a 2013 survey of parents and other primary caretakers of children and compares them with 1999 findings. The key findings include the following—

- Rates of children who were actually missing significantly decreased.
 - The rate of children with potential missing episodes who were in fact missing to their parent or caretaker significantly declined, from 9.2 per 1,000 in 1999 to 6.3 per 1,000 in 2013.
 - Reported missing children—those reported to police for the primary purpose of finding them—significantly decreased, from 6.5 per 1,000 in 1999 to 3.1 per 1,000 in 2013.
- No category of children with episodes that could cause them to become missing increased, and one category decreased.
 - The 2013 rates of children with runaway or thrownaway episodes, children abducted by family members, and children who were missing because they had been lost, stranded, or injured did not differ statistically from the corresponding 1999 rates.
 - Although the estimate is less reliable, the rate of children who were missing for benign reasons was significantly lower in the 2013 study (1.8 per 1,000 versus 3.6 per 1,000 in the 1999 study).





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Overview of the NISMART Series

This bulletin reports findings from the adult survey component of the Third National Incidence Studies of Missing, Abducted, Runaway, and Thrownaway Children (NISMART-3) that the Office of Juvenile Justice and Delinquency Prevention (OJJDP) sponsors. The 1984 Missing Children's Assistance Act (Public Law 98-473), most recently amended by Public Law 113-38, requires OJJDP to conduct national incidence studies to determine "the actual number of children reported missing each year, the number of children who are victims of abduction by strangers, the number of children who are the victims of parental kidnappings, and the number of children who are recovered each year."

To address this mandate, OJJDP has sponsored three cycles of NISMART. NISMART-1 (Finkelhor, Hotaling, and Sedlak, 1990) provided estimates of the number of children who experienced events or episodes that could cause them to become missing in the 1988 study year. NISMART-2 (Sedlak et al., 2002; Hammer et al., 2004) updated the estimates for the 1999 study year and provided estimates of the number of children who were missing to their caretakers or were reported as missing to authorities. This bulletin reports estimates from the 2013 NISMART-3 survey of adult parents and caretakers about all missing child episodes in the previous year. (Data collection for the web and phone interviews occurred from August 2012 through June 2014, but the research team obtained the majority of completed surveys during the first 6 months of 2013.) A separate OJJDP bulletin (Wolak, Finkelhor, and Sedlak, 2016) reports findings from the NISMART-3 law enforcement survey on stereotypical kidnappings.

Conceptualizing the Problem of Missing Children

The missing child cases that receive media attention are usually extreme examples. The problem of missing children is, in fact, more varied and complex; children can become missing for many reasons. The NISMART program has identified five categories of episodes that can cause children to become missing. "Episode children" include those who (1) were abducted by a family member; (2) were abducted by a nonfamily perpetrator; (3) ran away or were thrown away; (4) were missing because they were lost, stranded, or injured; and (5) were missing for benign reasons (i.e., misunderstandings). The chart, "NISMART Episode Definitions," lists the criteria that define these categories.

Not all children who experience episodes that meet these definitions were actually missing to their parents or caretakers; for example, a mother may know the whereabouts of her child who was abducted by the noncustodial father. Because of this, NISMART also defines, at two levels, subsets of episode children who were actually missing: A *caretaker missing child* is an episode child whose whereabouts were unknown to his or her caretaker, causing the caretaker to become alarmed for at least 1 hour and to try to locate the child. A *reported missing child* is a caretaker missing child who was reported to the police or a missing children's agency for the purpose of locating the child. These missing-child categories apply regardless of the type of episode that caused a child to become missing.

Episode Type	Requirements
Family abduction	<p>A member of the child’s family or someone acting on behalf of a family member takes or fails to return a child in violation of a custody order or other legitimate custodial rights, and—</p> <ul style="list-style-type: none"> • Conceals the child, or • Transports the child out of state with the intent to prevent contact, or • Expresses the intent to deprive the caretaker of custodial rights permanently or indefinitely. <p>For children who are age 15 or older and mentally competent, use of physical force or threat of bodily harm is required.</p>
Nonfamily abduction	<p>A nonfamily perpetrator, without lawful authority or parental permission, uses force or threat—</p> <ul style="list-style-type: none"> • To take a child (at least 20 feet or into a vehicle or building), or • To detain a child in a place where the child cannot leave or appeal for help for at least 1 hour. <p>For children who are younger than age 15 or mentally incompetent, force or threat is not needed if the perpetrator—</p> <ul style="list-style-type: none"> • Conceals the child’s whereabouts, or • Demands ransom, or • Expresses the intent to keep the child permanently.
Stereotypical kidnapping (nonfamily abduction subtype)	<p>A nonfamily abduction perpetrated by a stranger, person of unknown identity, or slight acquaintance in which the perpetrator—</p> <ul style="list-style-type: none"> • Kills the child, or • Detains the child overnight, or • Transports the child at least 50 miles, or • Demands ransom, or • Expresses the intent to keep the child permanently.
Runaway/ throwaway	<p>Runaway:</p> <ul style="list-style-type: none"> • A child who leaves home without permission and stays away overnight, or • A child who is away with permission but chooses not to come home and stays away for— <ul style="list-style-type: none"> o One night (if age 14 or younger or mentally incompetent), or o Two or more nights (if ages 15–17). <p>Throwaway:</p> <p>A child whom an adult household member tells to leave or prevents from returning home, and—</p> <ul style="list-style-type: none"> • Does not arrange for adequate alternative care, and • The child is gone overnight.
Missing involuntary, lost, stranded, or injured	<p>A child whose whereabouts are unknown to the caretaker, causing the caretaker to—</p> <ul style="list-style-type: none"> • Contact law enforcement or a missing children’s agency to locate the missing child, or • Become alarmed for at least 1 hour and try to locate the child, and the child— <ul style="list-style-type: none"> o Was trying to get home or make contact but was unable to do so because he or she was lost, stranded, or injured, or o Was too young to know how to return home or contact the caretaker.
Missing, benign explanation	<p>A child whose whereabouts are unknown to the caretaker, causing the caretaker to—</p> <ul style="list-style-type: none"> • Become alarmed for at least 1 hour, and • Try to locate the child, and • Contact the police about the episode for any reason, as long as the child did not fit one of the above episode types.

Survey Design and Methodology

The household survey first identifies households where children lived for at least 2 weeks during the preceding year and makes contact with the children’s parent or primary caretaker. After collecting some demographic information about the children in the household, the survey asks a series of “episode screener” questions to determine whether any of the children experienced any events that might qualify them under the study definitions. Respondents who report any episode are asked additional questions to describe the event and determine whether any of the children involved in the event fit the NISMART definitions of “episode children” or “missing children.”

Telephone Sampling Is Costly and No Longer Adequately Represents the Population

Previous NISMART cycles sampled households through random digit dialing, and telephone interviewers could complete a survey in a single call. Telephone interviewers would determine whether they had reached a household with children and, if so, they would proceed with the NISMART interview questions. Since the time of NISMART–2, several societal changes have dramatically affected survey research, making it much more difficult to represent the population through telephone sampling and substantially reducing survey response rates.

The sampling methodology of random digit dialing, calling landline phone numbers, no longer reaches a representative sample of the population because of the rapid move to cell-only telephone service—from 10.5 percent of households and 11.6 percent of all children in 2006 (Blumberg and Luke, 2007) to 47.4 percent of households and 55.3 percent of children in 2015 (Blumberg and Luke, 2015). Some researchers combine both landline and cell phone samples to address this issue, but this approach is costly and poses a number of logistical, methodological, and ethical challenges (Link, Daily et al., 2008).¹

Moreover, even these combined samples exclude households with no telephones (3.4 percent of households) (Blumberg and Luke, 2015) and those with unlisted landline numbers not in the sampling frame—possibly as much as 20 percent of all landline numbers (Brick, Williams, and Montaquila, 2011). Thus, it has become costly and complex to use telephone-based sampling methods, and they do not give complete coverage of U.S. households.

Survey Response Rates Have Decreased Sharply

At the same time, response rates to surveys have dramatically and steadily declined (National Research Council, 2013). At Pew Research, a typical household survey yielded a response rate of 36 percent in 1997, but by 2012 it had dropped to 9 percent (Kohut et al., 2012). Between 1997 and 2013, response rates to the National Health Interview Survey (adult sample module) fell from 80.4 percent to 61.2 percent (National Center for Health Statistics, 2014). The overall adult response rate for the California Health Interview Survey landline/list sample dropped from 37.7 percent in 2001 to 15 percent in 2011–12 (California Health Interview Survey, 2014). The screener response rate for the U.S. Department of Education’s National Household Education Survey (NHES) fell from 81 percent in 1991 to 52.5 percent in 2007, which prompted a major redesign (Van de Kerckhove et al., 2008).

Surveys Transition To Address-Based Sampling

These difficulties with telephone surveys—costliness, undercoverage of U.S. households, and precipitous decreases in response rates—have led many survey researchers to explore other approaches. Examples include the Centers for Disease Control and Prevention’s (CDC’s) Behavioral Risk Factors Surveillance System (BRFSS) (Link, Battaglia et al., 2008); the American National Election Studies (2014); the CDC’s Racial

and Ethnic Approaches to Community Health Risk Factor Survey (Barron, 2009); the National Household Education Survey (Brick, Williams, and Montaquila, 2011; Montaquila et al., 2013; Van de Kerckhove et al., 2008); and the National Oceanic and Atmospheric Administration, National Marine Fisheries Service survey of saltwater anglers (Brick, Andrews, and Mathiowetz, 2016; Mathiowetz et al., 2010). BRFSS pilot-tested an address-based sampling (ABS) and mail survey approach and a cell phone survey; it has continued using random digit dialing for sampling with the addition of a cell-phone-only supplement in 2011 (Centers for Disease Control and Prevention, 2014). By contrast, all the other surveys listed have transitioned to address-based sampling, and the last three have also transitioned to mail or mixed-mode survey methods.

During initial work on the NISMART–3 design, the ABS redesign of the NHES program (which had used random digit dialing since its inception) was underway. The preliminary results of the large-scale ABS field test were available, showing that an ABS mail survey approach yielded much higher coverage and response rates compared to landline random digit dialing (Montaquila et al., 2013). Guided by that experience, NISMART–3 used the same approach for sampling and screening for households with children: drawing a sample of residential households from the U.S. Postal Service Delivery Sequence File and mailing a short questionnaire asking whether any children had lived in the household for 2 consecutive weeks during the past year.

Cost considerations were also important in shaping the multimode approach of the NISMART–3 survey. To minimize the number of respondents who would require labor-intensive telephone interviews, adult parents or caretakers in households with children were first sent online to answer the key survey questions—those sections of the interview that applied to all respondents and to households with youth age 10 or older. This strategy appeared feasible because of the large and rapidly growing majority of adults in the United States who use the Internet—79 percent in 2010 and 87 percent in 2014 (Fox and Rainie, 2014). Only respondents who did not complete the survey online were transferred to telephone interviewers. Those included individuals who did not respond to the invitation to complete the online survey, those who began the online survey but did not complete it, and those who answered “yes” to any of the episode screener questions and thus required the detailed followup questions.

Notwithstanding these efforts to maximize coverage and minimize costs, NISMART–3 encountered the lower response rates currently affecting household surveys.

See the “Methodology” sidebar on pages 10 and 11 for more information on the household survey.

NISMART–3 Data Collection Results

Researchers contacted nearly 10,000 households with children and surveyed more than 3,000 adult parents and caretakers. Table 1 (page 6) shows the results of data collection for the eligibility screener, the interview, and the overall study. More than 41 percent of sampled households participated in the screener stage of the study;

9,991 of these households (24 percent) indicated that they had children. All households with children were eligible for the NISMART–3 interview and were invited to participate in the study. The majority of these eligible respondents (7,250, or 72.6 percent) provided an e-mail address in their returned screener questionnaire, and 8,015 (or 80.2 percent) provided a phone number.

Parents and caretakers of the children in eligible households could complete the survey online or through a computer-assisted telephone interview (CATI). They were first invited to go to the online survey (via e-mail,

EPISODE SCREENER QUESTIONS

1. Was there any time when anyone took or tried to take any of these children away from you against your wishes?
2. Did any family member or someone acting for a family member take or try to take any of these children in violation of a custody order, agreement, or other child living arrangement?
3. Did any family member outside of your household keep or try to keep any of these children from you when you were supposed to have them, even if for just a day or weekend?
4. Did any family member conceal any of these children or try to prevent you from having contact, that is, seeing or talking with them?
5. Did any of these children leave home without permission and stay away for at least a few hours? Did they stay away for at least 1 night?
6. Did any of these children choose not to come home from somewhere when they were supposed to and stay away for at least 1 night?
7. Did you or any adult member of your household force or tell any of these children to leave home or decide not to allow them back in the home? Did they leave for at least 1 night?
8. Was there any time when having any of these children in your home became a lot of trouble and they left?
9. Other than anything you have already answered, has there been any time when you did not know where any of these children were living?
10. Was there any time when any of these children were seriously hurt or injured and, as a result, did not come home and you were concerned about where they were?
11. Was there any time when you were concerned because you could not find any of these children or they did not come home?
12. Was there any time when any of these children became lost or you were unable to locate their whereabouts and you became alarmed and tried to find them?
13. Has anyone who is not a family member attacked any of these children with physical force or threatened any of these children with a weapon or any type of physical harm?
Were any of these children moved during this event—
 - 20 feet or more?
 - Into a vehicle?
 - Into a building?
 - Were any of these children kept, held, or detained during this event for an hour or longer?
14. Has anyone who is not a family member tried to sexually molest, rape, or have any of these children do something sexual?
Were any of these children moved during this event—
 - 20 feet or more?
 - Into a vehicle?
 - Into a building?Were any of these children kept, held, or detained during this event for an hour or longer?
15. Has anyone ever kidnapped or tried to kidnap any of these children?

Notes: All questions except number 15 are introduced with “In the past 12 months... .” If only one child had lived in the household in the past year, the questions asked about “this child.” Questions 5 through 9 are only asked about children age 7 years or older.



if available, and then a reminder by regular mail). If they did not complete the online survey, or answered “yes” to any of the episode screener questions in the abbreviated online version, they were assigned to complete the survey by phone so that CATI interviewers could ask about the details of any episodes. More than one-third (37 percent) of invitees completed the survey online or by phone.

A total of 1,482 parents and caretakers (14.8 percent of those invited to the online survey) logged in to view the survey; 1,251 of the invitees (12.5 percent) completed the survey online but had no episodes to report. Another 80 invitees finished the online survey and answered that household children had experienced one or more of the events described in the episode screener questions, so they required a CATI followup to complete the full survey.

Parents and caretakers who provided their e-mail address on the returned screener were more likely to complete the survey, online or through CATI, when compared to those who did not provide an e-mail address (41 percent versus 23 percent, respectively). Similarly, eligible parents and caretakers who provided a phone number responded at a higher rate than those who did not provide a number (41 percent versus 18 percent). Providing an e-mail address or a phone number on the returned eligibility screener probably reflected greater willingness to be involved in the study; this information certainly facilitated recontacting the respondents.

Across both the screener and interview phases, the NISMART–3 overall response rate was 15 percent, only one-fourth of the overall response rate of 61 percent obtained in the NISMART–2 survey in 1999 (Hammer, Sedlak, and Finkelhor, 2005). The decrease reflects the general decline in survey responses over the past two decades (National Research Council, 2013)—a trend that has raised widespread concern about the future potential of survey data to continue to address government

information needs. The NISMART–3 response rate is consistent with response rates that other recent large-scale surveys have obtained, especially those that offered small or no incentives (e.g., California Health Interview Survey, 2014; Dillman and Messer, 2012). NISMART–3 provided a \$1 preincentive in the initial screener mailing and no other incentive for participation.

Although the general decline in survey response rates undoubtedly affected NISMART–3, it is likely that the multiple contacts NISMART–3 required also affected the drop in overall response rates compared to the previous study cycle. As described earlier, in previous NISMART cycles, most households answered the eligibility screener and survey questions in a single (telephone) contact.

Table 1. Data Collection Results

Measure	Number or Percentage	
Screeners	Sample	130,000
	Ineligible returns ^a	12,534
	Refusals ^b	774
	Screener completes	41,484
	Screener Response Rate (RR3)^c	41%
	Eligible (with children)	9,991
	Eligibility Rate	24%
Interviews	Invited to the online survey	9,991
	Ineligible	157
	Interview completes	3,603
	Interview Response Rate (RR3)	37%
Overall Study Response Rate (RR3)^d		15%

^a Most ineligible returns were postal nondeliverables. Returned screeners that identified nonhouseholds were rare ($n = 13$).

^b Includes screener questionnaires that were returned blank.

^c RR3 is a standard American Association for Public Opinion Research (2015) measure of response rate. It is equal to the number of completes divided by the estimated total of eligible cases in the sample. It assumes that the proportion of nonrespondents (nonreturned screeners) that are eligible is the same as the proportion of returned screeners that are eligible and it computes the RR3 as the completes divided by the combined total of all eligible cases (those known to be eligible cases plus those estimated to be eligible cases among the nonrespondents).

^d The overall RR3 incorporates all eligibility criteria across both the screener and interview phases. Here, multiplying the screener response rate by the interview response rate yields the same overall study response rate as the RR3 computation, which defines eligibles using the combined criteria (households with children).

An estimated 139,900 children went missing because of benign explanations (a rate of 1.8 children per 1,000), which is significantly lower than the NISMART-2 rate of 3.6 children per 1,000.

The NISMART-2 eligibility screener response rate was 71 percent compared with the NISMART-3 rate of 41 percent, a decline of 30 percent. The NISMART-2 interview response rate for parents and caretakers in households with children was 80 percent, compared with the NISMART-3 rate of 37 percent, a decline of 43 percent. Thus, the largest decrease in response was in the second interview phase. This is not surprising, considering that the NISMART-3 interviewers had to recontact eligible respondents for the second phase, and that recontact was initially less personal (i.e., via mail and e-mail compared to telephone).

The percentage of households with children among the NISMART-3 screener respondents was also lower than expected compared with the percentage in the general population of households. However, it is comparable to NISMART-2 when taking general population trends into account. According to 2000 census data, 36 percent of households had children (U.S. Census Bureau, 2000); this decreased by 4 percent, to 32 percent in 2014 (U.S. Census Bureau, 2014).

In NISMART-2, 28 percent of screened households indicated they had children, whereas 24 percent of NISMART-3 screened households did—again, a decrease of 4 percent, consistent with the census trend. Both studies suggest reluctance among households with children to respond to a survey on the topic of children's safety. Underreporting of children in households is common in surveys (West and Robinson, 1999; O'Hare, 2009; Tourangeau, Kreuter, and Eckman, 2012). The level of underreporting here is similar to that obtained in the 2007 National Household Education Survey, which identified 29 percent of households as having eligible children in its 2007 survey (Montaquila et al., 2013).

Despite a Low Response Rate, the Potential for Nonresponse Bias Appears To Be Small

The low NISMART-3 response rate raised concerns about the potential for nonresponse bias in study estimates. The researchers examined this issue using four types of analyses:

1. Comparison of estimates of child and family characteristics from NISMART-3 and the American Community Survey (ACS).² Although some differences were significant, they were small. NISMART-3 estimates were lower than ACS estimates for the percentages of children in households below the poverty line (18.2 percent versus 21.6 percent), living with their married parents (61.5 percent versus 65.2 percent), and living with their mother (88.4 percent versus 92.5 percent). NISMART-3 agreed closely with ACS on the number of children in the household. Nonresponse bias is a function of the difference between respondents and nonrespondents and, when the difference is small—as these differences with the ACS suggest—the bias is small. Also, the fact that the NISMART survey data and the ACS data do not represent exactly the same things could explain the small differences that were observed.

2. Comparison of estimates of child and family characteristics from NISMART-2 and NISMART-3. Both studies have nonresponses but the degree of nonresponse in NISMART-3 is considerably greater and theoretically would permit greater opportunity for bias in the study estimates. A few characteristics differed significantly between NISMART-2 and NISMART-3: the percentage of children living in a large city, suburb, or large town (13.6 percent more in NISMART-3); the percentage of children living with an employed respondent (20.4 percent less in NISMART-3); and the percentage of children who lived in another household in the past year (6.2 percent more in NISMART-3). To some degree, these differences in characteristics could reflect real shifts in the general population of children in households during the 1999 to 2013 period. However, further analyses indicated that differences in distributions on these characteristics did not correlate with differences in responses to the episode screener questions; therefore, they could not have contributed to any differences in the rates of episode children or missing children in the two studies.



both stages of the survey—eligibility screener and interview. The results again indicated the potential for only minimal nonresponse bias in the NISMART–3 estimates.

Despite the low response rate in NISMART–3, the nonresponse bias analyses did not reveal any noteworthy bias potential. These results are consistent with recent work showing that nonresponse rates themselves are poor predictors of the magnitude of biases (Groves and Peytcheva, 2008) and are misleading as measures of survey representativeness (Peytcheva, 2013). Researchers have concluded that the relationship between nonresponse rates and nonresponse bias is not simple (Groves, 2006). Nevertheless, analyses of possible nonresponse bias were limited in this study. They were restricted to a small set of demographic characteristics—those available in both the NISMART–3 data and in the comparison databases. Bias could still exist if NISMART respondents differed substantially from nonrespondents on other characteristics strongly associated with the occurrence of NISMART episodes or missing children. However, data to evaluate such potential differences are not available.

3. Examination of differences in NISMART–3 eligibility screener response rates for population quartiles defined by child and family characteristics.

These analyses examined the response rates for the sampled addresses in relationship to the characteristics of households in their census tracts. The characteristics were census tract-level estimates from the ACS file covering 2009 through 2013. The 5-year file is the only file that gives data at the tract level. The percentage of households with a specific characteristic, such as the percentage of households with children younger than age 18, characterized each tract, and the tracts were classified into quartiles. Researchers then computed and compared response rates for the sampled addresses in the different census-tract quartiles. Differences in response rates across the quartiles were statistically significant for all characteristics examined: percentage of households with children ages 0–18, percentage of family households with more than six persons, percentage of children ages 0–18 in female householder families with no husband present, percentage of white-only children, percentage of black-only children, percentage of Hispanic children, percentage of children ages 12–17, percentage of occupied housing units that are owned, percentage of limited-English-speaking households, and percentage of families with incomes below the poverty line in the past 12 months. Although they were statistically significant, the differences in response rates were very small, indicating only a slight potential for nonresponse bias.

4. Examination of differences in the overall NISMART–3 completion rates for population quartiles defined by child and family characteristics.

The census-tract quartile analyses were repeated using the combined response for

Adult Survey Findings

Of the 3,603 adults who completed the NISMART–3 interview, 300 described episodes involving 356 children. The episodes were evaluated using the NISMART definitions; the estimates in table 2 are based only on children with experiences that met the criteria.

Table 2 presents the NISMART–3 estimates based on the adult household survey data as well as the corresponding estimates from NISMART–2. These are child-level estimates. In each category, any given child is counted once, even if he or she had more than one qualifying episode of that type during the previous year.

The adult household survey yielded sufficient numbers of children to generate relatively reliable estimates of runaways and throwaways and caretaker missing children. Estimates in both categories are based on more than 25 sample cases. Their coefficients of variation³ reflect their relative variability and are an index of their precision. Although the coefficients of variation in table 2 are higher than what is generally desirable (below 0.10), these two categories have the lowest coefficients of variation (about 0.20 or lower), so they are the most informative of the NISMART–3 findings. Estimates for the other categories are less reliable, largely because they are based on fewer sample cases.

Table 2. Estimated Numbers and Rates of Children With Episodes and Missing Episodes in NISMART-2 and NISMART-3

Category/Study	Sample (n)	Estimated Number of Children ^a	Rate per 1,000 Children ^b	Standard Error ^c	95% CI ^d	Coefficient of Variation ^e
Episode Children						
Runaways/Throwaways^{ns}						
NISMART-2	162	395,500	5.6	0.44	4.8–6.5	0.079
NISMART-3	31	413,000	5.3	1.01	3.3–7.3	0.189
Family Abducted^{ns}						
NISMART-2	99	192,900	2.7	0.37	2.0–3.5	0.135
NISMART-3 [†]	18	230,600	3.0	0.83	1.3–4.6	0.279
Missing, Benign Explanation^{**}						
NISMART-2	90	255,500	3.6	0.42	2.8–4.5	0.116
NISMART-3 [†]	11	139,900	1.8	0.63	0.6–3.0	0.348
Missing Involuntary, Lost, Stranded, Injured^{ns}						
NISMART-2	27	58,600	0.8	0.18	0.5–1.2	0.214
NISMART-3 [†]	9	129,800	1.7	0.56	0.6–2.8	0.333
Missing Episode Children						
Caretaker Missing^{**}						
NISMART-2	255	643,300	9.2	0.61	8.0–10.4	0.066
NISMART-3	37	491,000	6.3	1.15	4.1–8.6	0.181
Reported Missing^{***}						
NISMART-2	168	454,900	6.5	0.59	5.3–7.7	0.091
NISMART-3 [†]	19	238,300	3.1	0.75	1.6–4.6	0.244

[†] Estimate is based on fewer than 20 sample cases and is less reliable.

^{**} NISMART-2 and NISMART-3 difference is statistically significant at the $p < .05$ level.

^{***} NISMART-2 and NISMART-3 difference is statistically significant at the $p < .01$ level.

^{ns} NISMART-2 and NISMART-3 difference is not statistically significant.

^a The estimated number is the weighted total of children in the sample who qualify in the category, rounded to the nearest multiple of 100 (to avoid conveying a false sense of precision).

^b Between-studies comparisons use the rates to accommodate the increase in the size of the U.S. child population between the time of the NISMART-2 and NISMART-3 surveys. The child population at the time of NISMART-2 was 70,172,718; at the time of NISMART-3, it was 77,421,987. Rates are computed by dividing the estimated number of children in the category by the number of children in the U.S. population and multiplying by 1,000.

^c The standard error indicates the error or variability associated with the estimate because it is based on a sample rather than the entire population.

^d CI = confidence interval. The 95-percent confidence interval reflects the unreliability of the estimate. If the study were repeated 100 times with 100 samples from the overall population, 95 of the replications would produce estimates within the range shown.

^e See text and endnote 3 for explanation of coefficients of variation.

An estimated 5.3 children per 1,000 (413,000 children) had a countable runaway or throwaway episode during the previous year. This is still the most prevalent category of episode children, but it does not differ statistically from the 1999 NISMART-2 rate of 5.6 children per 1,000. Similarly, the NISMART-3 family abduction rate of 3 children per 1,000 (230,600 children) is not statistically different from the rate of 2.7 children per 1,000 in this category in NISMART-2. Although the 2013 rate of children who were missing because they were lost, stranded, or injured appears higher than the 1999 rate, the recent estimate is based on fewer than 10 sample cases, is among the least reliable rates in table 2, and does not differ statistically from the earlier level.

Estimates for the remaining NISMART-3 categories all show significant decreases from their previous levels.

An estimated 139,900 children went missing because of benign explanations (a rate of 1.8 children per 1,000), which is significantly lower than the NISMART-2 rate of 3.6 children per 1,000. An estimated 491,000 children (6.3 children per 1,000) were missing to their caretakers in 2013, a significant decrease from the rate of 9.2 per 1,000 children who met the definition of caretaker missing children in 1999. Parents or others called the police to find 238,300 children, which corresponded to a rate of 3.1 children per 1,000 who were reported missing in NISMART-3, less than half the rate of 6.5 reported missing children per 1,000 in NISMART-2.

Because of the limited numbers of NISMART-3 sample cases, it is not possible to provide subgroup estimates based on child or episode characteristics.

METHODOLOGY

Sample. The U.S. Postal Service maintains a Delivery Sequence File listing all addresses that receive mail deliveries. Residential addresses in this file provide very high coverage of U.S. households (Iannacchione, 2011). This address frame was sorted geographically by ZIP Code, carrier route, and walking sequence, and a sample of 130,000 addresses from all 50 states and the District of Columbia was selected with equal probabilities. Based on earlier address-based sampling studies and previous NISMART experience, this sample size was expected to yield approximately 11,000 completed adult interviews describing the experiences of more than 22,000 children.

Cohorts. Because this was the first NISMART cycle to use a multimode approach—mail, web, and computer-assisted telephone interview, as described later—the designs of the mailings, the reminders, and the project website were incrementally refined during initial data collection on the basis of experiences with a series of small subsamples. Thus, the 130,000-address sample was fielded in five cohorts. The first four used small subsamples of 3,000 or 6,000 addresses to develop the design of the mailed screener and the reminder materials that would yield the best response; the last cohort implemented the remainder of the sample (115,000 addresses) using the final versions. Data collection, from first mailing to final interview work, spanned the period from June 2012 through June 2014, but most participants answered questions about events that occurred in calendar year 2013.

The cohorts all received the same screener questions and answered the same survey questions about episodes and missing events. They differed only in their recruitment materials, the dates of their initial mailings, and the timing of their followup contacts. The *NISMART-3 Household Survey Methodology* report (Sedlak, Brick, and Brock, 2016) provides further details on the cohorts and all other aspects of the study methodology. Data from all five cohorts were combined for analyses and for this report.

Eligibility screener. NISMART-3 used three instruments: a paper household eligibility screener questionnaire that was mailed to sampled households, a web survey, and a computer-assisted telephone interview (CATI) survey. The household eligibility screener asked whether any children had lived in the household during the previous 12 months and, if so, how many children and how many of them were currently living there. Households that reported having children were

also asked for the name (nickname, or initials) of the parent or other household adult who cares for the children most of the time, their telephone number, and their e-mail address.

The eligibility screener packet contained a cover letter, answers to commonly asked questions, and the eligibility screener questionnaire, together with a \$1 incentive and a business-reply envelope to return the completed screener questionnaire. One week after the initial mailing, all of the sample addresses were sent a postcard reminding them to return their completed questionnaire and thanking them if they had already done so. Several weeks after the initial mailing, nonrespondents were sent another complete packet, with a cover letter that referred to the earlier request and with no additional monetary incentive. After 2 more weeks, still-nonresponding addresses were sent a third complete packet, with yet another version of the cover letter noting the previous mailings and requesting their participation.

Web survey. When the researchers received the completed screener questionnaires, they sent the parents or primary caretakers of the children in eligible households (those where children had lived during the past 12 months) invitations to complete the survey online. If the completed screener gave an e-mail address, the researchers e-mailed an invitation to the respondent with an embedded link to the online survey. Otherwise, researchers mailed the invitation to complete the web survey, giving the survey URL and the respondent's password or PIN. Reminder invitations to the web survey were mailed to those who did not respond to the initial invitation. The web survey was an abbreviated version of CATI, described below. It included the interview sections that applied to all respondents and the section that applied for households with youth age 10 or older.

Computer-assisted telephone interview. The NISMART interview began with an introduction (which verified that the respondent was an adult parent or caretaker of the household children, obtained consent, and asked for the number and characteristics of the children in the household), followed by the 15 episode screener questions. All completing respondents were asked these questions as well as the final section that asked one question about their household (whether they rented or owned their dwelling), thanked them for participating, and referred them to resources on the survey topics.

Respondents who reported any episode were routed to the sections that asked about the event(s). First, they were asked about the type of episode they reported—how many times it had occurred, when the event(s) occurred, what dates, and which children were involved. Following this, depending on their previous answers, they were routed to one or more of the sections about specific categories of episodes—family abduction, runaway/throwaway, nonfamily abduction, or “general missing” (which included questions about other types of episodes that might qualify as missing involuntary, lost, stranded, or injured, or missing because of a benign explanation).

Respondents who reported any episode or had any youth age 10 or older in residence were automatically sent to the household demographics section. A random sample of one-half of the remaining households was also assigned to receive the household demographics section to answer questions about the adults in the household, the home area, and household income. If any youth age 10 or older were currently living in the household, the respondent received the youth permission section. If more than one eligible youth lived in the household, the program sampled only one youth for the focus of this section. The questions in this section asked permission to contact the (sampled) youth and invite him or her to participate in a similar interview.

Invitees who did not respond online were assigned to CATI interviewers for followup if any phone number was available (whether from their returned eligibility screener or from the address sample frame). In addition, those who answered any episode screener question affirmatively online were told that the research team needed to speak with them further to learn more about these events, and they were assigned to CATI interviewers for followup. They were not considered to have completed the NISMART survey until they answered the detailed questions about any episode events they had identified.

In addition to the standard reminders, NISMART–3 staff undertook a number of additional efforts to increase response rates:

- Calling CATI nonrespondents as many as 35 times before classifying them as nonlocatable.

- Consulting a commercial vendor to find phone numbers for invitees who did not provide phone numbers and for those CATI cases that could not be located with existing phone numbers.
- Sending a postcard to all remaining nonrespondent invitees who could not be located by CATI efforts (because their number was not working or because the respondent identified on the screener could not be located through the available number), or who could not be transferred from the web to CATI because they still lacked phone numbers. The postcard notified the recipients that NISMART–3 staff had been trying to reach them, provided the web URL and their individual PINs, and asked them to call the study’s toll-free number if they could not complete the survey online.

Data weighting. The researchers weighted the children in the responding households to represent the U.S. population of children in households. The researchers computed the child-level weights first as the inverse of the selection probability for each child, based on the sampling rate used in drawing the systematic random sample of addresses from the address frame. They then adjusted the base weights so that the final weights on the sample were forced to sum to the general child population totals for a number of characteristics. This approach, termed “raking,” is intended to minimize any bias that derives from differential nonresponse that is correlated with the raking characteristics. The NISMART–3 child records were raked to the totals in the 2013 American Community Survey Public Use Microdata Sample on children’s age, sex, and race/ethnicity, and the households’ home tenure (rent or own) and census region. In addition, because the survey sampled different subsets of respondents to receive the questions about household demographics, the researchers modified the weights for analyses of these answers to adjust for respondents’ different probabilities of selection.

Variance estimation. Finally, the researchers developed a set of 99 Jackknife 1 replicate weights for each child record to compute correct standard errors for the study estimates that accounted for the clustering of children within households and unequal weights (Westat, 2007).



State, the number of missing children cases entered into the Missing Persons Clearinghouse declined 18 percent between 1999 and 2013 (New York State Division of Criminal Justice Services, 2014); and reports of missing children in California showed a 23-percent decline between 1999 and 2013 (Office of the Attorney General, State of California, 2015).

Cell Phone Technology May Have Helped Reduce the Problem of Missing Children

These reductions in the number of children missing to their caretakers may not be surprising given the ease of communication in present-day society. Since 1999, communication between children and their parents or other caretakers has dramatically improved because of the rapid growth of cell phone ownership. Between 2000 and 2015, the percentage of U.S. adults who owned a cell phone rose from 53 percent to 92 percent (Pew Research Center, 2017). A survey by C+R Research, a market research firm in Chicago, found that between 2003 and 2010, the percentage of 8- to 11-year-olds with cell phones more than quadrupled (from 7 percent to 31 percent), and the percentage of 12- to 14-year-olds with cell phones more than tripled (from 21 percent to 67 percent). The percentage of older teens (15- to 17-year-olds) owning cell phones rose from 65 percent in 2005 to 82 percent in 2010 (YouthBeat, 2016). The Pew Internet and American Life Project similarly showed steady increases during this period in cell phone ownership among teens (ages 12 to 17): 45 percent in 2004, 63 percent in 2006, and 71 percent in 2008 (Lenhart, 2009). By the time of the latest Pew survey (Lenhart, 2015), 83 percent of teens ages 13 to 17 had or used a mobile phone of some kind—including 82 percent of 13- and 14-year-olds, and 92 percent of 15- to 17-year-olds (equivalent to the percentage of adults with cell phones in 2015).

It is particularly noteworthy that the significant declines in NISMART estimates were in children who were perceived as missing to caretakers, and children reported as missing to police. If parents are able to use communication tools to locate children whom they worry about, then one might expect these categories of missing children to be the most likely to decrease. A number of the narrative answers describing candidate episodes in the interviews mentioned the role of the children's (and parents') cell phones. Of 201 children whom parents or caretakers described in episodes that were evaluated against the "Missing, Benign Explanation" and "Missing Involuntary, Lost, Stranded, or Injured" definitions, 51 (one-fourth) mentioned cell phones. Some parents or caretakers mentioned that they became concerned when they could not reach their children, discovering later it was because the children's phones were turned off, out of power, or left elsewhere.

Conclusion

2013 Rates of Missing Children Are Significantly Lower Than the 1999 Rates

The NISMART-3 adult household survey yielded a number of encouraging findings. The rate of children missing to their caretakers was 32 percent lower than its level in NISMART-2, and the rate of children who were reported missing to police showed a 52-percent decline since the previous study. The rate of children who were missing due to benign reasons also declined significantly—50 percent lower in 2013, compared with its 1999 level. The other episode categories showed no reliable changes: Rates of runaways or throwaways, family-abducted children, and children missing because they were lost, stranded, or injured did not differ from their earlier levels.

These results are consistent with the National Crime Information Center (NCIC) statistics on missing children. Federal law (42 U.S.C. § 5780) requires law enforcement agencies to enter the child's information into NCIC within 2 hours of receiving the report. During 2013, law enforcement agencies entered a total of 462,567 reports on children (persons younger than age 18) into the NCIC missing person records (Federal Bureau of Investigation, National Crime Information Center, 2014). This reflected a 31-percent decrease from the total of 670,276 reports on children that were entered into NCIC during 1999 (Federal Bureau of Investigation, Criminal Justice Information Services, personal communication, 2016, providing 1999 NCIC statistics).⁴ Similarly, data from state missing children clearinghouses that publish annual statistics also show declines during this period. For example, from 2007 to 2014, Illinois saw a nearly 43-percent decline in reports of missing persons younger than age 18 (Illinois State Police, 2015); in New York

EXAMPLES OF NISMART-3 EPISODES

Family Abduction Episodes

- A father, upset about going through a separation with the mother, had threatened to try to get primary custody of their two children, ages 7 and 10. He kept them in violation of their custody and visitation agreement, which provided that he have the children on weekends. One weekend, he fled with the children to another state to prevent the mother's contact with them and to make their return difficult. When they did not return as expected, the mother became alarmed and called the police. The father attempted to hide where they were, and it took the mother 3 days to learn where they had gone. The episode lasted 4 days.
- A mother violated a court order by taking her 9-year-old child during her weekend visitation to an out-of-state location and concealing their whereabouts. She intended to establish residence in the other state in order to prevent contact and make return difficult. The father was afraid that the mother would use physical force to stop the child from contacting him and that the child would be harmed. The father contacted the police in order to find them but said that he worked for a law firm and found them through the firm's resources. The episode lasted 6 days. The mother returned the child only under threat from a judge. Since then, the mother has threatened that she will again refuse to return the child after a visit.

Runaway or Throwaway Episodes

- The parent of a 17-year-old girl confronted her about lying by claiming that she was pregnant. The girl left, saying she could not face her peers. The girl moved around from place to place so the parent could not locate her despite calling a number of places and sending friends to look for her. The parent contacted the police, who found the girl. The parent believes it is likely that she will run away again.
- The mother of a 13-year-old girl went to the girl's room and could not find her. The girl had left without permission, possibly during the night, leaving no clue as to where she had gone. The child had been unhappy at home and had many conflicts with her parents. The mother called the police during the first day for help in locating the girl. The episode lasted 3 weeks.

Missing, Involuntary Episodes—Lost, Stranded, or Injured Children

- A 14-year-old boy and his parents were on a vacation trip in the high country wilderness. **The boy was riding his bicycle while** the parents were walking and jogging on the same trail. He decided to take a shortcut and got lost. The mother had run ahead, and when the father caught up with her, they realized that neither of them had seen their son on the route. They were concerned because he was so late getting back and the temperature had dropped to 40 degrees. The mother stayed where they had parked **the car while the father drove to a lower elevation so he could call the sheriff to help find** their son. The episode lasted 2 hours. The boy returned on his own, and the sheriff arrived and took a report.
- An 8-year-old boy and his family had recently moved from another state. The mother put him on the school bus in the morning. On his second day riding the school bus, he got off at the wrong stop. When he did not get off at the stop where his mother was waiting, both parents became very alarmed. The mother drove to another bus stop to look for him, while the father called the school and then the police to help find the child. Meanwhile, the boy found a police officer on the street and asked him for help.

Missing, Benign Explanation Episodes

- A 7-year-old boy was supposed to be playing at his friend's house. When it got late, the mother went to that house and he was not there. She and her husband searched at all his neighborhood friends' houses twice, as well as at the local school properties—anywhere they could think he might be. When they could not find him anywhere, they contacted the police. Shortly after the police arrived, the boy returned, having walked home. He had been playing outdoors in a park area.
- An 8-year-old girl was with her family vacationing at a house on the beach. She got tired and went to bed early. The family did not know where she was, so they began searching for her. They looked everywhere they could think of, both inside and outside, and could not find her. Finally, they called the police. The police were taking their report over the phone when one family member found the girl asleep on a top bunk bed.

Note: Examples of nonfamily abduction episodes are omitted because NISMART-3 identified too few to analyze.

Some also said that when they could not reach their own children, they tried their children's friends' or other parents' cell phones. In the majority of candidate episodes, the children were located relatively quickly—so the parent or caretaker did not remain alarmed or very alarmed for the hour or longer required to qualify the child as caretaker missing and before they became concerned enough to call the police for help in locating the child (to qualify the child as reported missing). The cultural change that cell phone technology spurred has helped to reduce the problem of missing children.

Survey Limitations

NISMART attempts to identify relatively infrequent events. The current survey, with a limited sample size and further challenged by the current context of reduced survey response rates, did not yield sufficient numbers of cases to meet many of the study objectives. As reported above, NISMART-3 yielded a low overall response rate of only 15 percent. Although analyses indicated only a slight potential of nonresponse bias, the analyses had limitations. The NISMART-3 response is consistent with other recent household surveys using small incentives or none, but the loss of sample size to nonresponse seriously limited the 2013 findings. The number of sample children who fit the study definitions supported reliable estimates for only two categories (runaways/throwaways and caretaker missing) and could not provide any estimate of nonfamily abducted children. Without significant changes, the NISMART-3 household survey methodology will not support estimates of children in all the missing episode categories in future NISMART cycles.

The household survey method has a number of advantages, including its ability to identify children who were missing from their parents' or caretakers' perspective but not reported to authorities, and children who experienced episodes that can be difficult to identify in law enforcement records (e.g., runaway/throwaway children as well as child abductions that occur in the course of other crimes, such as physical or sexual assaults that

involve moving a child 20 feet or more). However, the challenges may outweigh these advantages.

Although alterations of the household survey methodology (e.g., incentives to raise response rates and use of a larger sample size) might increase the number of cases available for estimates, it is not certain that the yield would be sufficient. Substantial improvements would be necessary to improve the precision of estimates enough (i.e., reduce the confidence intervals enough) to reliably track changes over time. Moreover, the strategies needed to do so would substantially increase the costs of the project and, if response rates continue to be low, the potential for hidden nonresponse bias would still remain a concern.

OJJDP is currently exploring alternative strategies to identify cases in future NISMART cycles through a redesign of the law enforcement survey that will provide estimates of family abducted children and reported missing children.

Endnotes

1. Phone numbers can be ported from landline to cell, and vice versa, leading to dynamic overlap of the frames. It is illegal to call cell phones with automatic dialers, and dialing manually is costly in interviewer time. Lost cell phone minutes are a concern, so survey length is minimized and researchers compensate respondents for their lost minutes. Weighting the two samples to jointly represent the overall population is challenging, since the landline and cell sample respondents have very different demographics. In addition, there are other legal and ethical considerations, including privacy and safety issues (e.g., when cell respondents are reached in public locations or while driving).
2. Technical documentation for the American Community Survey Public Use Microdata Sample (PUMS) is available at www.census.gov/programs-surveys/acs/technical-documentation/pums.html. Access the PUMS data through the U.S. Census Bureau's DataFerrett, available at <http://dataferrett.census.gov>.

An estimated 491,000 children (6.3 children per 1,000) were missing to their caretakers in 2013, a significant decrease from the 1999 rate of 9.2 per 1,000 children.

3. The coefficient of variation is the ratio of the standard error to the estimate itself. It allows comparison of the precision or relative variability of estimates on a common scale that is independent of the estimates themselves.

4. The NCIC statistics are sums of the monthly total number of entered reports and, unlike the NISMART estimates, they are not unduplicated to the child level. Thus, a child who ran away and was reported missing more than once during the calendar year has multiple entries in the NCIC records.

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