ABSTRACT. Objective. The gender gap describing the apparent differences in male and female reports of firearm-ownership and -storage habits has never been evaluated among individuals who live in the same household. Thus, the objective of this study was to examine the level of agreement on household firearms and storage practices among cohabiting partners.

Methods. Data for this investigation came from follow-up telephone interviews of participants who underwent a randomized, controlled trial to test the effect of home-safety counseling, including firearm safety, on behavior change. Baseline interviews were conducted at a level 1 pediatric emergency department in North Carolina with adults who took a child or adolescent who was under his or her care to a pediatric emergency department. Follow-up interviews were conducted via telephone at 18 months after intervention with participants who reported household firearms at baseline. Participants then were asked whether their partners could be contacted for a separate telephone interview. The measured outcomes were number and type of household firearms and firearm-storage practices. The strength of agreement between partners’ reported firearm-ownership and -storage practices was measured with the χ statistic.

Results. Seventy-six partner–respondent pairs completed the study (62% response rate). Most initial respondents were white (89%), female (76%), and college graduates (52%); the median age was 37. There were no same-gender partners, and 91% reported that they were spouses. There was not perfect agreement among male and female partners with regard to the presence of household firearms. Most men (80%) reported the presence of household firearms than did women (72%; χ = .64). The discordance between partner pairs regarding the number of household firearms and type was poor to fair (κ = .35 and .34, respectively). Although similar proportions of men and women reported storing any household firearms locked up (63% men and 62% women), the κ values demonstrated only moderate agreement (κ = .56–.60). Most men (88%) and women (83%) reported that firearm storage was the husband’s responsibility; 82% of men compared with 17% of women reported that they personally owned all of the firearms.

Conclusions. A gender gap does exist in the reporting of firearm ownership with regard to the number and type of firearms owned. There are also differences in reported firearm-storage practices, which are likely related to the finding that men were reported to be the primary owner of firearms in most households as well as the person more commonly responsible for firearm storage. Firearm-safety counseling should include male partners in the history-taking process to improve knowledge about the presence and storage patterns of household firearms. Pediatrics 2005;115:662–667. URL: www.pediatrics.org/cgi/doi/10.1542/peds.2004-2259; firearms, anticipatory guidance, gender, gun safety, child safety.

ABBREVIATIONS. ED, emergency department; CI, confidence interval.

Firearms are a significant source of morbidity and mortality among the pediatric population.1–4 In 2001, there were 2118 firearm-related fatalities among those aged 0 to 18 years.5 Research suggests that the majority of unintentional firearm injuries and suicides that affect youths involve firearms that were obtained from a home environment.3,6–11 and many of these firearms were likely stored unsafely.8,9 Therefore, preventive strategies that are advocated by many medical and public health professionals involve efforts to encourage parents to remove firearms from their homes or store them in such a manner as to be inaccessible to children and youths.12–16 Specific recommended storage practices include keeping firearms (1) unloaded with the ammunition locked and stored separately; (2) kept in a locked container, such as in a gun safe, lock box, or gun cabinet; and/or (3) secured with an extrinsic safety device, such as a trigger lock or gun lock.13,16–18 For promotion of safe firearm storage to be effective, it is necessary to be able to assess the prevalence of firearm-ownership and -storage practices for the population as a whole, as well as for individual households.19 Knowing the prevalence of firearm-ownership and -storage practices at the population level would contribute to the development and evaluation of policy initiatives and mass media cam-
campaigns that promote safe storage.20 Being able to assess accurately firearm-ownership and -storage practices at the individual level is important for determining who should be provided with firearm-safety counseling and for providing tailored recommendations to individuals.

Obtaining accurate assessments of firearm-ownership and -storage practices may be compromised because of potential systematic biases in reporting.19 Specifically, women have been consistently less likely than men to indicate the presence of a household firearm and have been more likely to report fewer guns per household and safer firearm-storage practices.21–27 In 1 study, investigators studied differences in reporting about the presence of guns in homes among men and women by examining 3 large data sets in which respondents for the household were selected randomly. Although respondents theoretically were from the same population, they did not reside together. Men were more likely to report the presence of a gun in their homes and were also more likely to report a greater number of guns per household.26 Also of note was that men were more likely than women to be the personal owners and users of household firearms and more likely to report less safe storage practices.21,22,26,28,29 This body of literature suggests that women may be unaware of the presence and storage patterns of firearms in their homes or that they provide socially desirable responses about firearms during surveys. However, more research is needed to determine whether a gender gap exists in reporting on household firearms. Published reports to date have not compared responses of men and women who reside in the same households but instead have compared the aggregate responses of men and women in studies. It therefore is possible that gender differences in responses reflect true differences across households.

The purpose of this article is to reexamine the gender gap in reporting on household firearms by comparing partners’ responses to items about household firearm-ownership and -storage practices. Specifically, we wanted to quantify the extent of agreement to which partners reported household firearms, including number and type, and firearm-storage practices. Findings have implications for understanding the extent to which prevalence data on firearm-ownership and -storage practices are potentially affected by reporting biases, as well as for how clinicians and health educators conduct anticipatory guidance.

METHODS

Data for this investigation came from follow-up telephone surveys of participants who had completed an intervention study that tests the effect of home-safety counseling, including firearm safety, on behavior change. After participants completed the baseline survey, they were randomized into an intervention or a control group. The baseline survey was a 21-item, self-administered questionnaire that asked about demographic characteristics and injury prevention practices, including firearm-ownership and -storage practices. The questionnaire was a modified version of the Childhood Injury Prevention Practices Survey, which was developed and validated at the Harborview Injury Prevention and Research Center at the University of Washington in Seattle. Most response sets were yes or no, although some had Likert response sets (all of the time, most of the time, sometimes, rarely, never) and some had open-ended responses. Because firearm ownership among couples can be joint ownership, the question about firearm ownership, “How many of the guns do you personally own?” had the following response set: all, some, or none. The intervention group received information about home safety tailored to their responses on the baseline survey. Those who were in the intervention group and had household firearms received tailored counseling about safe firearm storage, including firearm removal, and they received gunlocks for their firearms. Participants in the control group received information about the importance of physical activity and healthful eating. Subsequent behavior change was assessed via telephone interviews. Participants who completed the baseline survey received a gift and were not required to participate in the follow-up interview.

Potential participants were adults who took a child who was in his or her care to a pediatric emergency department (ED) in North Carolina. The level 1 trauma center is in a teaching hospital that trains emergency medicine and pediatrics residents and serves as a referral center for the state. It serves urban, suburban, and rural populations. Those who met inclusion criteria were ≥18 years old, had children who were <18 years old in their home, were able to speak English, and were willing to complete a survey. Adults were excluded when the child who was brought in had a medical condition that was serious enough to be categorized as triage level 1 or 2, which indicated an emergent or urgent condition. In addition, caregivers who were suspected of being involved in child maltreatment or whose children were suicidal or victims of physical or sexual assault were not approached. The University of North Carolina at Chapel Hill School of Medicine’s Institutional Review Board approved the study, and all participants granted informed consent.

Enrollment took place between the hours of 3:00 pm and 11:00 pm at least 3 to 6 days per week, including weekend nights. Trained graduate students who served as research assistants were responsible for inviting caregivers to participate in the study, administering safety counseling tailored to participants’ responses on the baseline survey, and keeping logs of included and excluded individuals. When individuals were invited to enroll, they were told that the study was about home safety in general; firearms were not specifically mentioned.

The follow-up surveys were conducted by telephone interviews at 9 and 18 months after the initial firearm-safety intervention. At 18 months, we recontacted only those who reported gun ownership on the baseline survey. The follow-up surveys included demographic characteristics, childhood injury prevention practices including firearm-ownership and -storage practices, and home-safety roles and responsibilities. After respondents completed the second follow-up interview at 18 months, we asked for permission to contact the household partner to complete a safety survey. When they consented, we asked them to provide us with the name of their partner. Attempts to contact the partner were made at least 2 weeks after the interview with the initial respondent. When the partner consented, the partner was given the identical survey as the initial respondent. For this cross-sectional analysis, we restricted the sample to respondents who reported household gun ownership at baseline and their household partners who consented to and completed the interview.

Data Management and Statistical Analyses

Data were analyzed by univariate and bivariate analyses. For the analyses, frequencies and percentages were used for categorical variables; means and SDs were used to describe continuous variables. We compared reports of firearm ownership and storage among household male and female partners by using the x statistic. We measured the degree of interobserver agreement, beyond what would have occurred by chance, between partner and initial respondent with the κ statistic using the following ranges for strength of agreement: <.00, poor; .00 to .20, slight; .21 to .40, fair; .41 to .60, moderate; .61 to .80, substantial; and .81 to <.90, almost perfect agreement.30 When appropriate, we calculated 95% confidence intervals (CIs) to assess the degree of statistical significance of the strength of agreement. All statistical analysis were conducted using SAS 8 (SAS Institute, Cary, NC).31

RESULTS

Seventy-six partner–respondent pairs completed the study from 148 gun owners who completed the second follow-up interviews (response rate: 62%); 26 of the 148 participants did not have a household partner. Twenty-two participants declined to have their partner interviewed. Of participants who gave permission to contact their household partner, 9 partners were unreachable after at least 15 attempts and 15 partners refused the partner interview.

Demographic characteristics that were obtained from the baseline ED survey for the initial respondents are shown in Table 1. We obtained minimal demographic information on the follow-up surveys. Most initial respondents were white (89%), female (76%), and college graduates (52%). The median age was 37 (range: 20–73; SD: ±9.3). All reported partner pairs were women and men; there were no same-gender partners reported. Ninety-one percent of partners reported that they were engaged or girlfriends and boyfriends. Most of the initial respondents were the parents of the child who was brought to the ED; however, there were 4 grandparents. Fifty-two percent of household partners reported having completed college. There was no significant difference between the proportion of participants who had been randomized to the intervention group (n = 40; 53%) and the control group (n = 36; 47%) or in the gender distribution of these groups; there were 31 women and 9 men in the control group and 27 women and 9 men in the intervention group.

Firearm Ownership and Number of Household Firearms

There was not perfect agreement about the presence of household firearms among male and female partners who resided in the same household. In response to the question, “Do you or anyone else in your household currently own any type of gun?” 80% of men reported yes, compared with 72% of women. This generated a $\kappa$ coefficient of .64, which is in the lower range of substantial agreement (95% CI: 0.44 to 0.84; Table 2). There was more reported agreement about the known ownership of firearms by youths; both 20% of men and 20% of women reported that youths in the home owned a gun ($\kappa = 1.0$; Table 2). More men than women (82% vs 17%, respectively) reported that they owned all of the household firearms (Table 3).

There was less agreement on the number and types of firearms in the household. Men reported a range of 1 to 11 guns in their households. Although this range was similar to that reported by women (range: 1–9), when household partners were compared, the $\kappa$ was .35, indicating only fair agreement. Similarly, regarding types of guns, there was only moderate agreement among household partners regarding the number of handguns and only fair agreement in the number of long guns (Table 3).

Firearm-Storage Practices

Although the reported proportions were similar, there was also significant discordance in many reported storage behaviors. Ten percent of men and women reported that any household firearm was stored loaded, and >60% of men and women reported that all household firearms were stored locked up; however, there was only moderate and slightly substantial agreement in these domains (Table 4). Locking devices were reportedly not used in most households, and the level of agreement of use when it was significant was from moderate to substantial. Men generally reported greater use of locking devices than women, except for gun safes and gun locks. Women had greater reports of storing guns locked in alternative ways and keeping the ammunition stored locked and separate from guns.

Firearm-Storage Roles and Responsibilities

Most men and women reported that firearm storage was the husband’s responsibility in their household (88% and 83%, respectively). None of the women reported that it was their sole responsibility, although 2% of men said that it was the wife’s responsibility. Eleven percent of women and 5% of

<table>
<thead>
<tr>
<th>Question</th>
<th>Men, % Yes</th>
<th>Women, % Yes</th>
<th>Concordance $\kappa$</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you or anyone else in your household currently own any type of gun?</td>
<td>80</td>
<td>72</td>
<td>.64</td>
<td>0.44 to 0.84</td>
</tr>
<tr>
<td>Do you have any children or teenagers in the home who own guns?</td>
<td>20</td>
<td>20</td>
<td>.00</td>
<td>1.00 to 1.00</td>
</tr>
</tbody>
</table>
men reported joint responsibility for storing household firearms (Table 5).

**DISCUSSION**

Past research suggests that in couples with 2 adults, women may be less likely to report the presence of household firearms, as compared with their male partners. This conclusion was drawn from several studies that demonstrated that men and women from theoretically similar households report different prevalence of firearm-ownership and -storage practices. This study contributes to what is known by comparing responses from men and women from the same households. Our findings indicate that there is a gap in the reports of firearm ownership within cohabiting couples, with men tending to report the presence of guns more frequently and a greater number of guns. The differences in reported safe storage practices were mixed, with men reporting safer storage practices in some domains and women in others.

A gender gap in reporting household firearm-ownership and -storage practices has important implications for the promotion of safe storage of firearms in general, in the clinical setting, as well as for research. More needs to be known about how couples make decisions about whether to have firearms in the home, as well as how to store them. That men are more likely to obtain, personally own, use, carry, and take care of firearms suggests that men’s reports are more likely to be accurate than their female partners; however, this may not be the case when women are the sole owners of firearms. Our research and that of others suggests that some men do not disclose to their partners that there are guns in the home. The finding that women seem to have less knowledge about household firearms indicates that their ability to participate in decision making may be compromised. Moreover, if women believe that there are no firearms in their home or that the firearms in the home are stored safely, then they have a decreased incentive to participate in decision making because they believe that their home is already safe. Furthermore, if the information provided by women to their clinicians about the presence or storage of household firearm is inaccurate, then subsequent counseling received is likely to be ineffective, if counseling is received at all.

In terms of research implications, that male and female partners who reside in the same household provide different answers on household firearm-ownership and -storage represents a significant source of information bias within the literature. It thus is important to pay close attention to the gender of respondents and how respondents were chosen and who is the gun owner in reviewing research that estimates the prevalence of household firearms and storage practices using a single respondent.

This study had some limitations, including a small sample size. The sample also was obtained from 1 geographic region in the south among individuals who spoke English and were predominately white and heterosexual and had received postsecondary education; therefore, this study may have limited generalizability for other populations. As in many other studies of this nature, social desirability may have played a role in participants’ responses, and storage habits of firearms are likely to be less safe than reported and the number of household firearms likely is greater. It is also possible that the results overestimate the safety of firearm-storage practices because individuals who may have had a firearm injury that may have been attributable to unsafe storage would have been ineligible for this study.

### TABLE 3. Agreement Between Men and Women on Firearm Ownership, Number, and Type (n = 76 Pairs)

<table>
<thead>
<tr>
<th>Question</th>
<th>Male Response</th>
<th>Female Response</th>
<th>κ</th>
</tr>
</thead>
<tbody>
<tr>
<td>How many of the guns do you personally own?</td>
<td>All, % 82</td>
<td>17 NA</td>
<td>.35</td>
</tr>
<tr>
<td>Some, % 8</td>
<td>18 NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None, % 10</td>
<td>75 NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How many guns are there in your household?</td>
<td>0–11</td>
<td>0–9</td>
<td>.35</td>
</tr>
<tr>
<td>How many of the guns are handguns?</td>
<td>0–3</td>
<td>0–4</td>
<td>.59</td>
</tr>
<tr>
<td>How many of the guns are long guns?</td>
<td>0–10</td>
<td>0–9</td>
<td>.34</td>
</tr>
</tbody>
</table>

NA indicates not applicable.

### TABLE 4. Gun Storage and Agreement Between Men and Women (n = 76 Pairs)

<table>
<thead>
<tr>
<th>Question</th>
<th>Male, % Yes</th>
<th>Female, % Yes</th>
<th>Concordance κ</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are any of the guns in the home stored loaded?</td>
<td>10</td>
<td>10</td>
<td>.56*</td>
<td>(0.17 to 0.94)</td>
</tr>
<tr>
<td>Are all of your guns stored locked up?</td>
<td>63</td>
<td>62</td>
<td>.63*</td>
<td>(0.41 to 0.85)</td>
</tr>
<tr>
<td>Do you use any of the following to lock your guns?</td>
<td>Trigger lock 19</td>
<td>15</td>
<td>.10</td>
<td>(−0.21 to 0.41)</td>
</tr>
<tr>
<td>Lock box 12</td>
<td>8</td>
<td>.33</td>
<td>(−0.07 to 0.74)</td>
<td></td>
</tr>
<tr>
<td>Gun safe 24</td>
<td>27</td>
<td>.73*</td>
<td>(0.51 to 0.95)</td>
<td></td>
</tr>
<tr>
<td>Gun cabinet 21</td>
<td>19</td>
<td>.67*</td>
<td>(0.41 to 0.94)</td>
<td></td>
</tr>
<tr>
<td>Gun lock 8</td>
<td>14</td>
<td>.49*</td>
<td>(0.12 to 0.87)</td>
<td></td>
</tr>
<tr>
<td>Do you store your guns locked in any other way?</td>
<td>15</td>
<td>24</td>
<td>.45*</td>
<td>(0.14 to 0.77)</td>
</tr>
<tr>
<td>Are any of the guns in your home stored both unlocked and loaded?</td>
<td>3</td>
<td>0</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Is all of the ammunition stored locked and separate from your guns?</td>
<td>79</td>
<td>86</td>
<td>.12</td>
<td>(−0.21 to 0.45)</td>
</tr>
</tbody>
</table>

NA indicates not applicable.

* κ is statistically significant.
because they would have presented to the ED with a triage level of 1 or 2. In addition, in this study, the initial respondents all reported household ownership. It is possible that the magnitude of the gender gap could have been greater if we had interviewed the partners of those who did not report firearm ownership at baseline. It is possible that partners in these homes may have reported household ownership, which was unknown or unreported by the initial respondent. Future research should examine this issue more specifically. The intervention component of phase 1 of this research may be another source of bias. The individuals who received firearm-storage counseling may have responded by locating the guns in their home and may have become more knowledgeable about the guns in doing so. This would have either widened or narrowed the gap between what they and their partner knew about the guns in their home, depending on which person was more knowledgeable in the first place. Despite random assignment and that women and men were equally likely to be assigned to the intervention group, the majority (76%) of the respondents who were enrolled at baseline were women. As discussed above, women are thought to be less familiar with guns in their home than are men.21–27 Therefore, if counseling did in fact bring about a general increase in what respondents knew about the guns in their home, then the result would have been to make a majority of the paired partners in this study more similar in terms of their household firearm knowledge. Ultimately, then, we anticipate that any bias stemming from the use of this sample would be to underestimate the magnitude of the gender gap that we have identified. If this is the case, then the findings may have limited generalizability but provide important information, suggesting that the gender gap may be more extreme in the general population than in the sample studied here.

The primary mode through which most parents receive firearm-safety counseling is a clinical venue. Unlike counseling that is given to prevent most childhood injuries, such as poisons, burns, and falls, which is generally provided universally to all parents of young children at well-child visits, studies have demonstrated that firearm-safety counseling including safe storage is generally provided selectively to parents who report gun ownership and/or unsafe gun storage.32 If a parent states that he or she does not have household firearms, then he or she may not receive firearm-safety counseling. In addition to reported household firearm-ownership status, other predictors of physicians’ providing firearm-safety counseling include physicians’ perception of elevated family risk, presence of young children in household, female physicians, and younger physician age.32,33 Selective clinical counseling, particularly when female parents are asked about gun ownership and storage practices, may result in the omission of firearm-safety counseling for families who may benefit from it. This could be important because most counseling is provided to female parents, who more commonly bring children to clinical visits.34–37

### CONCLUSIONS

A gender gap does exist in reports of the presence and the numbers of household firearms, firearm type, and storage patterns among male and female household partners. One reason for this phenomenon may be that most gun owners are men who have the primary roles and responsibilities for firearm-storage practices. Because of these reporting differences, firearm-safety counseling should include male partners, primary gun owners, and/or the person who is responsible for storing the household firearms in the history-taking and counseling process. It may also be important to provide firearm-safety counseling in alternative settings outside clinical venues where men may frequent, such as home improvement stores, workplace environments, shooting ranges, and sporting events given that few men bring their children to routine health maintenance appointments.

### ACKNOWLEDGMENTS

Financial support for this research was provided by the Harold Amos Faculty Development Award of the Robert Wood Johnson Foundation and the Faculty Scholars Award of the William T. Grant Foundation.

We thank Dr David Grossman, former director of the Harborview Injury Prevention and Research Center, for the use of the baseline survey. We thank the many research assistants who were involved in data collection.

### REFERENCES

Do Partners With Children Know About Firearms in Their Home? Evidence of a Gender Gap and Implications for Practitioners

Tamera Coyne-Beasley, Lorena Baccaglini, Renee M. Johnson, Briana Webster and Douglas J. Wiebe

*Pediatrics* 2005;115;e662

DOI: 10.1542/peds.2004-2259

---

**Updated Information & Services**

Including high resolution figures, can be found at:

/content/115/6/e662.full.html

**References**

This article cites 30 articles, 9 of which can be accessed free at:

/content/115/6/e662.full.html#ref-list-1

**Citations**

This article has been cited by 5 HighWire-hosted articles:

/content/115/6/e662.full.html#related-urls

**Subspecialty Collections**

This article, along with others on similar topics, appears in the following collection(s):

- *Injury, Violence & Poison Prevention* /cgi/collection/injury_violence_-_poison_prevention_sub
- *Firearms* /cgi/collection/firearms_sub

**Permissions & Licensing**

Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at:

/site/misc/Permissions.xhtml

**Reprints**

Information about ordering reprints can be found online:

/site/misc/reprints.xhtml

---

PEDIATRICS is the official journal of the American Academy of Pediatrics. A monthly publication, it has been published continuously since 1948. PEDIATRICS is owned, published, and trademarked by the American Academy of Pediatrics, 141 Northwest Point Boulevard, Elk Grove Village, Illinois, 60007. Copyright © 2005 by the American Academy of Pediatrics. All rights reserved. Print ISSN: 0031-4005. Online ISSN: 1098-4275.
Do Partners With Children Know About Firearms in Their Home? Evidence of a Gender Gap and Implications for Practitioners
Tamera Coyne-Beasley, Lorena Baccaglini, Renee M. Johnson, Briana Webster and Douglas J. Wiebe

Pediatrics 2005;115:e662
DOI: 10.1542/peds.2004-2259

The online version of this article, along with updated information and services, is located on the World Wide Web at:
/content/115/6/e662.full.html