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Motivations for firearm possession and storage practices among urban young adults: differences between parents and non-parents

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Abstract

Objectives—To evaluate motivations for firearm possession among urban young adults and determine if differences emerge between parents and non-parents, and to identify if storage practices differed according to motivation for firearm possession and parenting status.

Methods—We used cross-sectional data among young adults seeking urban emergency department treatment at Hurley Medical Center between 2017 and 2018. Our analyses, completed in 2020, included 194 firearm-possessing young adults, 95 of whom were young parents.

Results—Firearm-possessing parents were more likely to have a firearm for protection, than for any other motivation, compared with firearm-possessing non-parents (OR: 2.38, 95% CI 1.06 to 5.46). A significant interaction between parenting status and motivation for possession indicated the association between protective motivations and locked storage was significantly different between parents and non-parents, whereby there was a decreased odds of locked storage among

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non-parents who were motivated to possess a firearm for protection compared with any other motivation, but this association did not exist for parents (interaction OR=10.57, $p<0.05$).

Conclusion—Parental motivation for possessing a firearm most often lies in the desire to protect families. This motivation, however, does not necessitate unsafe storage.

BACKGROUND

Firearms are the second leading cause of death among children and adolescents (age 1–19 years)¹ and the leading cause of death among emerging and young adult populations (age 20–30 years).² Identifying and understanding motivations for firearm possession and storage practices are necessary for designing and delivering effective firearm safety interventions for both parents and their children.³ Although prior research has identified motivations for firearm possession among the general population,⁴ as well as among high-risk assault-injured youth seeking emergency department (ED) care in urban settings,⁵ we do not know if these motivations—and corresponding storage practices—vary by parenting status—specifically among young parents.

In general, individuals who keep firearms for protection are less likely to store their firearms unloaded and locked.^{6,7} Researchers have also reported that firearm-possessing parents have perceptions that safe storage interferes with personal protection needs.⁸ Yet, in other work, having a child in the home is associated with a higher odds of safe firearm storage.⁹ We have yet to reconcile the competing influences of possessing a firearm for protection and having children present in the home on safe firearm storage practices. Does the presence of children in the home out-weigh the desire to have a firearm readily accessible among young parents who possess a firearm for protection? Or, does the need for protection drive firearm storage behaviour—regardless of parenting status? The purpose of this study was to answer these key questions by evaluating motivations for firearm possession and corresponding storage practices among urban young adults and to evaluate if differences emerge between parents and non-parents.

METHODS

Data source

Data for the present study came from cross-sectional screening data collected as part of an intensive longitudinal study of firearm behaviours conducted among adolescents and young adults seeking urban ED treatment in Flint, Michigan.¹⁰ Hurley Medical Center and University of Michigan Institutional Review Boards approved study procedures, and the study team obtained a National Institutes of Health certificate of confidentiality.

The study team approached individuals aged 16–29 years who presented to Hurley Medical Center ED for any reason between July 2017 and June 2018 to participate in the study. Exclusion criteria included presentation for sexual assault, child maltreatment, suicidal ideation/attempt, serious mental illness (eg, schizophrenia) or cognitive impairment precluding consent (eg, intoxication). The study also excluded participants in active police custody. Recruitment proceeded 7 days/week (14:00–24:00). Following written consent (and/or assent with parental/guardian consent if age < 18 years), patients self-administered

a private computerised survey. Participants received a dollar store gift (~\$1 value) for participation in the survey. In total, 1311 individuals completed the data collection survey (one duplicate survey removed), and we included 194 in the present analysis (see Analysis section).

Measures

Firearm possession—The survey included questions regarding if respondents had owned or carried a firearm with them (including in their car) in the prior 3 months, using two items from the National Survey of Weapon-Related Experiences, Behaviors, and Concerns of High School Youth.¹¹ As in prior work,⁵ we combined these items to create the dichotomous variable of firearm possession or no firearm possession during the prior 3 months.

Motivation for firearm possession—Participants reported the primary reason for firearm possession using a modified item from the National Survey of Weapon-Related Experiences, Behaviors, and Concerns of High School Youth.¹¹ For each type of firearm that an individual possessed, they reported the primary reason for having that type of firearm. Response options included to protect myself, my family, or my friends; for hunting or sporting activities; I was holding it for someone; to get back at someone for revenge; because most of my friends carry guns; to sell it to someone; required to have a gun for my job; other. Given our study aims and the majority of responses being ‘to protect myself, my family, or my friends,’ we collapsed response options into two categories for analysis: (1) to protect myself, my family, or my friends and (2) other, non-violent motivation (eg, for hunting or sporting activities; I was holding it for someone; because most of my friends carry guns; to sell it to someone; required to have a gun for my job; other). We dropped respondents who answered ‘to get back at someone or for revenge’ due to the low frequency of responses in this category (eg, two responses) and the conceptual differences to other motivations within the ‘other, non-violent motivation’ category. Because of the few respondents with non-violent motivation responses, we were unable to further parse motivations within analyses.

Parenting status—To determine parenting status, respondents reported the number of children they have and if any of the children live with them (including part-time) using two items from the Flint Adolescent Study.¹² For the present analyses, we identified parents as those respondents who reported having at least one child who lived with them at least part of the time.

Firearm storage practices—Respondents who possessed a firearm answered questions regarding firearm storage adapted from the 1995 Behavioral Risk Factor Surveillance System Survey Questionnaire.¹³ Specifically, they answered ‘Are all of the guns in or around your house or car stored in a locked place that can only be opened with a key or combination, or with a trigger lock that can only be opened with a key or combination? (note: A safety switch is not a trigger lock)’. We considered respondents who indicated ‘yes’ to this question as practising locked firearm storage; we considered all other respondents as not practising locked firearm storage. A limitation of this measure was the absence of ‘cable lock’ as an explicit example of an external locking device.

Sociodemographic variables—We included a number of sociodemographic control variables including age (in years), biological sex (male or female), race (African–American or non-African–American), marital status (married/living with someone or single), and if the respondent and/or their parents receive any type of public assistance (yes or no). Lastly, analyses controlled for perceived community violence using summary scores from 11 items from the ‘Things I Have Seen and Heard’ survey (range 0–33).¹⁴

Analysis

We completed analyses in 2020. We conducted all data cleaning and analysis within R statistical package. We excluded 1088 individuals who reported not possessing a firearm in the past 3 months, and we excluded an additional 25 individuals who reported different motivations for different types of firearms (as we considered possession motivation as an outcome in our first model and thus could not incorporate multiple motivations for one respondent) and/or reported their firearm possession motivation was ‘to get back at someone or for revenge.’ This resulted in a sample of 198 individuals who either only possessed one type of firearm (n=144) or who reported the same motivation for firearm possession across multiple firearm types (n=54). We excluded an additional four individuals with incomplete information on covariates for a final analytical sample of 194 respondents. We first used a multivariate logistic regression to identify if motivations for firearm possession (eg, protection vs other non-violent motivation) differed between parents and non-parents. We then used a second multivariate logistic regression to identify if storage practices differed based on motivation for firearm possession and parenting status. Specifically, we included an interaction term of ‘parenting status’ X ‘motivation for firearm possession’ to evaluate if the association between possessing a firearm for protection and storage practices differed based on if an individual was a parent. All aforementioned analytical models controlled for sociodemographic variables.

RESULTS

Almost half (48%) of the analytical sample were parents. The mean age of the sample was 22.6 (SD 3.62) years. The majority of the sample reported practising locked firearm storage (n=159, 82%) and were motivated to possess a firearm for protection (n=136, 70%). Bivariate comparisons showed that all sociodemographic factors and motivations for firearm possession differed between parents and non-parents; protection (vs all other non-violent motivations) was more likely to motivate parents to possess a firearm compared with non-parents. Firearm storage practices did not vary between parents and non-parents. The majority of the sample possessed handguns (n=142, 73%), and a minority possessed long guns (n=62, 32%). Table 1 presents details of descriptive statistics.

Table 2 provides results from our first multivariate logistic regression model explaining protective versus other motivations for possessing a firearm. Firearm-possessing parents were more likely to possess a firearm for protection than for some other motivation compared with firearm-possessing non-parents (Odds Ratio (OR): 2.38, 95% Confidence Interval (CI) 1.06 to 5.46).

Table 3 provides results from our second multivariate logistic regression model explaining locked firearm storage practices versus unlocked storage practices. A significant interaction effect between parenting status and motivation for possession indicated that the association between firearm possession motivations and locked storage practices was significantly different between parents and non-parents, whereby we found decreased odds of locked storage among non-parents who were motivated to possess a firearm for protection compared with all other motivations, but this association between possession motivations and locked storage did not exist for parents (interaction OR=10.57, $p<0.05$). Probing the nature of the interaction, non-parents who possessed a firearm for protection had 0.18 times the odds of practising locked storage compared with non-parents who were motivated to possess a firearm for some other reason (OR=0.18, $p=0.02$). Conversely, parents who possessed a firearm for protection had equivalent odds of practising locked storage compared with parents who were motivated to possess a firearm for another reason ($p=0.39$).

DISCUSSION

On becoming parents, individuals may feel a heightened obligation to protect their families. We found that motivation for firearm possession was associated with parenting status, such that being a parent was associated with protection being the primary motivation for firearm possession. Our findings further demonstrated that the presence of children in the home may increase locked storage practices and neutralise the desire to have a firearm readily accessible among young parents who possess a firearm for protection.

Different motivations have different intervention implications. For example, although providing a safe and/or locking device may be effective for individuals who use a firearm for hunting or sporting activities,¹⁵ such an intervention may not have similar effectiveness among parents who want to easily and quickly access a firearm for protection. Although we found that being a parent was associated with an increased odds of locked storage among individuals motivated by protection to possess a firearm, 14% of parents who possessed a firearm still did not practice locked storage. For these parents, intervention strategies might focus on motivating behaviour change by reinforcing personal values of family safety and protection against unintentional injury and child firearm access. For parents who believe that locked storage interferes with personal protection needs,⁸ the field should consider testing alternative intervention strategies such as Smart storage devices that allow for quick access by parents but protect children from easy access. Finally, beyond the individual level, we need future studies to evaluate community and neighborhood-level interventions that have been shown to reduce firearm violence within the community—such a neighborhood greening (eg, restoring and remediating distressed and abandoned properties)¹⁶—to identify if such strategies reduce young urban parents' perceptions that they need to possess a firearm to protect themselves and their families. These novel intervention approaches should promote child safety while balancing parents' desires to protect their families against crime and violence.

Our analyses do not reveal that parenthood causes a change in firearm motivations. Instead, we found that motivation patterns differ between parents and non-parents, and parenting

has an interactive effect with motivations for firearm possession when explaining firearm storage practices. Future longitudinal studies that explore how firearm possession and locked storage practices may change in response to individuals becoming parents is necessary. Limitations of the present study include the crude measure of locked storage practices and the small sample size. Additionally, the present study focused on young parents and their children; thus, we do not know how findings might generalise to older parents, non-parental guardians, and children spanning different ages. Future studies that incorporate more nuanced measures of storage practices to understand the frequency of such behaviours, contextual factors when firearms are not always stored safely, how behaviours change according to firearm type and qualitative research to understand the motivation of protection, would be useful next steps to build on our findings.

Public health implications

Overall, the present study suggests that parents may feel a heightened obligation to possess a firearm to protect their families compared with non-parents in communities with elevated rates of violence, but this motivation does not necessarily promote unsafe storage practices. This finding suggests that tailoring firearm safety interventions that leverage these values of protection when encouraging parents to adopt safe firearm storage practices may be necessary.

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What is already known on the subject

- Individuals who keep firearms for protection are less likely to store their firearms unloaded and locked.

What this study adds

- Parents may feel a heightened obligation to possess a firearm to protect families compared with non-parents.
- Among parents, however, this safety motivation does not necessarily promote unsafe storage.

Table 1

Descriptive statistics for analytic sample, stratified by parenting status (n=194)

Variable	Total sample, % or mean (SD)	Parents, % or mean (SD)	Non-parents, % or mean (SD)	X ² or t-test P value
Storage practice				
Locked storage	82%	86%	78%	0.17
Unlocked storage	18%	14%	22%	
Motivation for firearm possession				
Protection	70%	83%	57%	<0.001 ***
Non-violent motivation other than protection	30%	17%	43%	
Age (years)	22.6 (3.62)	24.3 (3.1)	21.0 (3.4)	<0.001 ***
Biological sex				
Male	44%	36%	53%	0.03 *
Female	56%	64%	47%	
Public assistance				
Receives	53%	63%	44%	0.01 *
Does not receive	47%	37%	56%	
Race				
African-American	49%	60%	39%	0.006 **
Non-African-American	51%	40%	61%	
Marital status				
Single or never married	74%	66%	56%	0.03 *
Married or living with someone	26%	34%	37%	
Perceived community violence	11.9 (10.2)	13.6 (10.6)	10.6 (9.6)	0.04 *
Total	194	95	99	

* P<0.05,

** P<0.01,

*** P<0.001.

Table 2

Results from multinomial logistic regression explaining protective motivations for firearm possession versus other, non-violent motivation (n=194)

Variable	Odds Ratio (95% Confidence Interval)
Parent	2.38 (1.06 to 5.46) *
Age	1.15 (1.03 to 1.29) *
Male	1.04 (0.51 to 2.13)
Receive public assistance	1.15 (0.54 to 2.42)
African-American	3.25 (1.47 to 7.48) ***
Single or never married	2.04 (0.90 to 4.66)
Perceived community violence	1.02 (0.98 to 1.06)

* P<0.05,

** P<0.01,

*** P<0.001.

Table 3

Results from multinomial logistic regression explaining locked firearm storage practices versus unlocked storage practices (n=194)

Variable	Odds Ratio (95% Confidence Interval)
Parent	0.28 (0.04 to 1.88)
Motivated by protection	0.18 (0.04 to 0.64)*
Parent×motivated by protection	10.57 (1.41 to 80.50)*
Age	1.06 (0.93 to 1.21)
Male	0.58 (0.26 to 1.29)
Receive public assistance	0.91 (0.40 to 2.09)
African-American	0.52 (0.21 to 1.27)
Single or never married	0.88 (0.31 to 2.32)
Perceived community violence	1.00 (0.96 to 1.04)

*
P<0.05,

**
P<0.01,

P<0.001.