ARTICLE

Factors Preventing Gun Acquisition and Carrying Among Incarcerated Adolescent Males

Lorraine H. Freed, MD, MPH; Daniel W. Webster, ScD, MPH; Jason J. Longwell, MHS; Joseph Carrese, MD, MPH; Modena H. Wilson, MD, MPH

Context: Despite the wide availability of guns in the United States, not all delinquent adolescents own guns and not all adolescent gun owners carry them at all times. Research about the factors that prevent high-risk youth from acquiring and carrying guns is limited.

Objective: To determine, from the perspective of incarcerated adolescent males, factors that prevent acquiring or carrying guns, either on a temporary or permanent basis.

Design and Setting: In-depth, semistructured interviews were conducted with randomly selected incarcerated adolescent males at a residential juvenile justice facility from January to May 1998. Transcribed interviews were examined for recurrent themes.

Participants: Forty-five incarcerated adolescent males.

Main Outcome Measures: Reported factors limiting gun acquisition and carrying.

Results: Seventy-one percent of the sample had either owned or carried a gun out of their home. We identified 6 recurring themes that, at least on occasion, prevented or delayed delinquent youth from acquiring or carrying guns. The most commonly cited factors were fear of being arrested and incarcerated and lack of perceived need for a gun. Other themes included not wanting to hurt oneself or others, respect for the opinions of others, inability to find a source for a desired gun, and lack of money to acquire a desired gun.

Conclusions: We identified 6 factors that limited gun acquisition and carrying among a sample of incarcerated male adolescents. Knowledge of these factors should inform intervention efforts to reduce youth gun acquisition and carrying.

Arch Pediatr Adolesc Med. 2001;155:335-341

From the Robert Wood Johnson Clinical Scholars Program (Drs Freed, Carrese, and Wilson and Mr Longwell), Division of General Pediatrics and Adolescent Medicine (Drs Freed and Wilson) and Department of Medicine (Dr Carrese), Johns Hopkins School of Medicine, Baltimore, Md; Center for Gun Policy and Research, Johns Hopkins School of Public Health (Dr Webster), Baltimore; and Division of Adolescent/Young Adult Medicine, Children's Hospital, Boston, Mass (Dr Freed).

YOUTH GUN possession poses a threat to an adolescent's own health as well as the public's safety.[1,2] In the United States, firearms were used in 70% of the homicides committed in 1998 by youth younger than 18 years.[1] Because many incidents of youth violence result from impulsive responses to volatile situations, the presence of firearms can increase the lethality of such altercations.[3,4] In fact, the accessibility of guns is believed to be a contributing factor to the high rates of youth gun violence in the United States.[2,5]

In the United States, youth access to guns is not uncommon. It is estimated that 9.6% of male high school students have carried a gun within the previous 30 days.[6] Gun carrying is even more common among various high-risk groups. For example, approximately 25% of adolescent males in high-crime areas have carried guns[7,8] and more than 80% of male juvenile offenders report having possessed a gun.[7,9]

The supply of guns to adolescents is regulated by federal laws that prohibit transfers of handguns to and possession of handguns by juveniles younger than 18 years[10] and licensed gun dealers from selling handguns to persons younger than 21 years.[11] Federally licensed gun dealers are also prohibited from selling rifles and shotguns to anyone younger than 18 years. Despite the existence of these gun laws, many adolescents report that it would be relatively easy for them to gain access to a firearm through thefts and various illicit market sources.[7,12,13] Although adolescent gun carriers report strong motivations for acquiring and carrying guns (eg, fear, power),[14-16] most adolescents do not own or carry guns.[6,15,17,18] This is true even for adolescents living in high-crime neighborhoods.[8] Furthermore, even many adolescents who own guns carry them only intermittently.[7,15,19] Thus, there seem to be important factors

For editorial comment see page 330

©2001 American Medical Association. All rights reserved.
Downloaded From: http://archpedi.jamanetwork.com/ on 05/04/2016

SUBJECTS AND METHODS

STUDY DESIGN

This qualitative study was conducted with in-depth, semistructured interviews. This method was chosen because it provided the opportunity to obtain a deeper understanding of the factors that prevent youth gun acquisition and carrying than was possible with a forced-choice questionnaire.

STUDY POPULATION

Prospective participants were randomly selected from the residents of a Maryland juvenile justice facility for males. This facility houses youth from a large city and surrounding counties, the majority having been incarcerated for such crimes as drug possession and distribution, theft, burglary, robbery, and assault. The facility contains adolescents in 2 different programs. One is a short-stay program, mainly for adolescents who previously have been arrested but never placed in a residential facility. The other houses the most serious offenders in the Maryland juvenile justice system. To be eligible for the study, adolescents from both programs had to be 14 to 18 years of age, available at the time of interview, and able to provide informed assent/consent.

STUDY PROCEDURES

Informed assent/consent was obtained from randomly selected adolescents. Prospective participants were assured that their participation was voluntary and that failure to participate would not affect their treatment at the facility or length of stay. The protocol was approved by the Human Subjects Committee at the researchers' institution and by the Maryland Department of Juvenile Justice, and a Certificate of Confidentiality was obtained. Researchers were blinded to the participants' names throughout the entire selection and interview process.

Semistructured, in-depth interviews were conducted with each respondent by one researcher (L.H.F.) with a note-taker present. To protect participants' confidentiality, the interviews were not audiotaped. These interviews were conducted from January to May 1998. Following the interviews, the interview notes were transcribed (usually within 24 hours of the interview) and the transcripts were proofread (by L.H.F.) for accuracy. The transcripts were entered into NUD*IST, a qualitative software package used for data coding and analysis.[20]

INSTRUMENT

The interview guide consisted of both open- and closed-ended questions about the youths' experiences with and attitudes about guns. Questions were developed after extensive literature review and consultation with experts in youth violence, and included modified versions of some questions used in previous studies.[7-9,14] Respondents were asked whether they had ever owned or carried a firearm. They were classified as "gun experienced" if they had owned a gun or carried one out of their home. Those who indicated that they had not owned a firearm were asked why they had not acquired a gun. Those who had owned a firearm were asked whether there was any time when they wanted a gun but could not acquire one. If the respondent indicated that there had been such an incident, they were asked why they were unable to do so. Individuals who reported that they had carried a firearm were asked what kept them from carrying a firearm all of the time. Respondents were also asked about their motivations for obtaining guns. Questions were also asked about participants' age, race, place of residence, exposure to violence, and involvement in delinquent activities such as drug dealing and weapon use. Finally, adolescents were asked to rate, on a scale of 1 to 10, how safe they felt in their neighborhood.

Given the qualitative nature of this study, the questions varied slightly as the interviews proceeded. This process reflects the iterative nature of data gathering and analysis in qualitative research. Occasionally, this resulted in some questions being omitted from an interview.

ANALYSIS

Two researchers independently read through the transcripts and assigned codes to each separate idea. The coded transcripts were compared and differences were discussed and resolved. In addition, the portions of the transcripts that contained the same codes were examined together and recurrent themes were identified. In the analysis, we included only those factors that the adolescents reported as having affected their own behavior.

Trustworthiness of the data, a qualitative approximation of validity and reliability, was addressed in several ways. First, enrollment of the subjects continued until new themes were no longer being heard. Second, each transcript was coded by 2 researchers. Finally, the research team assessed the face validity of the responses.

After participants were categorized based on the themes identified in their interviews, bivariate associations between categorical variables were assessed using χ^2 and Fisher exact tests. Mean ranks were compared using the Mann-Whitney *U* test. Statistical analyses were performed with the Statistical Product and Service Solutions (Chicago, Ill) software package.[21]

that prevent adolescents, even those who are high risk, from acquiring and carrying guns.

Previous research on gun acquisition and carrying by adolescents has largely focused on discovering correlates of gun involvement and on motivations for gun acquisition.[7,8,13,14,17] While such research has enhanced our understanding of the factors that encourage youth to acquire and carry guns, there has been limited attention to deterrents to these behaviors among high-risk youth. Our study was designed to gain a better understanding of youth gun involvement, particularly those factors behind high-risk youths' decisions not to acquire or carry a gun. Reductions in the amount of time adolescents are exposed to guns may translate into decreases in firearm use. Thus, we were interested in learning about those factors that prevented high-risk adolescents from

©2001 American Medical Association. All rights reserved.
Downloaded From: http://archpedi.jamanetwork.com/ on 05/04/2016

Table 1. Characteristics of Incarcerated Adolescent Males by Gun Experience and for the Entire Sample*

Characteristic	No. of Interviews Where Variable Was Discussed	No Gun Experience (n = 13)	Gun Experience (n = 32)	Overall (n = 45)
Mean (SD) age, y	45	15.9 (1.3)	16.3 (0.9)	16.2 (1.0)
Race	45			
White		5/13 (39)	5/32 (16)	10/45 (22)
Black		6/13 (46)	24/32 (75)	30/45 (67)
Mixed race/other		2/13 (15)	3/32 (9)	5/45 (11)
Lived in the city	44	5/13 (39)	22/31 (71)	27/44 (61)
In long-term program	45	5/13 (39)	15/32 (47)	20/45 (44)
Sold drugs	36	5/9 (56)	24/27 (89)	29/36 (81)
Prior victimization with a weapon	44	4/12 (33)	26/32 (81)	30/44 (68)
Used gun to threaten or shoot at someone	42	0/13 (0)	18/29 (62)	18/42 (43)
Mean (SD) safety rating	43	7.5 (2.9)	5.7 (3.0)	6.2 (3.0)

*Data are presented as number (percentage) unless otherwise indicated. "Gun experience" refers to either having owned a gun or carried a gun outside the home. Unless specified, data are presented as the number responding affirmatively divided by the number where the topic was discussed (percentage of those discussed with an affirmative response). Denominators differ because some items were not discussed with all participants.

ever acquiring or carrying a gun, as well as those factors that delayed the time to acquisition of a gun or reduced gun carrying among those with gun experience. The specific research questions we sought to answer with this study were (1) What factors do incarcerated adolescent males say kept them from being able to acquire a desired gun? and (2) What factors do incarcerated adolescent males say influenced their decisions to avoid acquiring or carrying a gun, either on a temporary or more permanent basis?

RESULTS

PARTICIPANT CHARACTERISTICS

Of the 45 participants, 25 were from the short-term facility and 20 were from the longer-term facility. Only 1 eligible and selected youth refused to participate. The mean age of those who participated in the study was 16.2 years, with a range of 14 to 18 years. Thirty (67%) of the participants were black, 10 (22%) were white, and 5 (11%) were either of mixed or another race. Twenty-seven participants had lived in the city and 17 were from a suburban county or small town. Of the 36 participants with whom the topic was discussed, 29 (81%) reported having sold drugs (**Table 1**).

Thirty of the participants (67%) had owned guns and 27 (60%) had carried guns out of their home. For purposes of this study, 32 (71%) of the participants were considered to be "gun experienced," ie, either they had owned a gun and/or carried one out of their home. Sixty-eight percent (30/44) of the participants stated that they had been threatened or harmed with a weapon of some type and 43% (18/42) had used a gun to threaten or shoot at someone (Table 1).

Those who had experience with guns were more likely than those without gun experience to have dealt drugs (89% [24/27] vs 56% [5/9], $P=.05$), to have been victimized by someone with a weapon (81% [26/32] vs 33% [4/12], $P<.01$), and to have lived in the city (71% [22/31] vs 39% [5/13], $P<.05$). Gun-experienced youth also tended to rate their neighborhoods as being less safe than did youth not experienced with guns (5.7/10 vs 7.5/10, $P=.07$). While the power to detect differences was limited by the small sample size, statistically significant differences were not found between the 2 groups with respect to age and program in the facility. Among the incarcerated youth, 75% (24/32) of those with gun experience and 46% (6/13) of those without gun experience were black; however, the difference was not statistically significant ($P=.09$ for comparison between black vs all other racial groups) (Table 1).

For the most part, the factors limiting gun acquisition and carrying were similar between those with and those without gun experience. As a result, this article combines the responses from both groups, commenting on differences where relevant (**Table 2**).

SUPPLY- AND DEMAND-SIDE FACTORS

More than 90% of the adolescents interviewed indicated that, in at least 1 incident, they did not acquire or carry a gun. Among these adolescents, more than 75% mentioned more than 1 reason for not acquiring or carrying a gun. Each of these reasons could be classified within an economic market framework as either a supply- or demand-side factor.[18] Supply-side factors were conceptualized as obstacles to acquisition of a desired gun, such as the inability to locate a trustworthy supplier willing to sell a suitable gun at a price the youth can afford. Demand-side factors were defined as those factors that reduce a youth's desire to acquire or carry a gun, such as perceived risks or low expectations of benefit from having or carrying a gun.

In some instances, it was difficult to differentiate whether certain cited factors were operating by affecting gun acquisition or gun carrying. As such, throughout this article, the term *gun involvement* is used when referring to both acquisition and carrying.

SUPPLY-SIDE FACTORS

Inability to Find a Source

Lack of a source from which to acquire a gun was not mentioned as a reason that those without any gun expe-

©2001 American Medical Association. All rights reserved.
Downloaded From: http://archpedi.jamanetwork.com/ on 05/04/2016

Table 2. Factors Preventing or Delaying Gun Acquisition and Carrying by Gun Experience of Youth*

Factors	No Gun Experience (n = 13)	Gun Experience (n = 32)	Overall (N = 45)
Supply side			
No source	0 (0)	9 (28)	**9** (20)
Price	2 (15)	3 (9)	**5** (11)
Demand side			
Fear of arrest or incarceration	8 (62)	23 (72)	**31** (69)
Opinions of others	4 (31)	10 (31)	**14** (31)
Concern about hurting self/others	6 (46)	10 (31)	**16** (36)
No need for a gun	8 (62)	19 (59)	**27** (60)

**Data are presented as number (percentage) of youth reporting. Column percents do not add to 100% as youth could mention more than 1 factor during the interviews. "Gun experience" is defined as either having owned a gun or carried a gun outside the home.*

rience did not acquire a gun. However, more than a quarter of those with gun experience described times when they could not acquire a desired gun at the time they needed or wanted one because of difficulties in locating a suitable gun source. One youth who had previously owned several guns described his search for an automatic weapon: "I had to call several people, page several people, finally a friend of mine said he found one in [another state]. It was a friend of a friend. I took my car and drove down there. . . . " Two participants described how they were not able to locate a gun because they could not find their usual source for a gun. One of these youths said it took him 3 months to acquire a desired gun. When asked whether there was anyone else from whom he could have bought the gun, he replied: "Yes, I just don't trust them like that." He then explained that he did not want to purchase a used gun and he did not feel he could trust anyone else but this one particular source. He explained this concern noting that a person unknown to him may sell him a used gun that was used to commit a murder without telling him of this fact.

Price of Gun

Another factor preventing gun acquisition was the price of the gun. While a few youths did report that used guns could be purchased off the street for as low as $10, some adolescents expressed reservations about acquiring used guns. As mentioned previously, these youth indicated a reluctance to acquire used guns out of fear that the gun may have been used in a previous crime for which they could potentially be held responsible. One such youth, who desired a gun after his sister was robbed, did not acquire it "'cause I didn't have the money. . . . Some people buy guns off the street for $10-$20. I had money but I didn't want no gun off the street. They probably kill somebody and pass it to me, and I get caught with it. . . . "

Those with a desire for higher-quality guns also reported instances in which they did not acquire a gun or delayed getting one because they could not afford the type they wanted.

DEMAND-SIDE FACTORS

Fear of Arrest and Incarceration

Fear of being arrested and possibly incarcerated was the most prominent reason that youth limited or avoided gun involvement. Comments such as "The cops are too strict where I live. . . . [Because of the police], I'd be too nervous if carrying a gun" were expressed by those who had no gun experience. In addition, adolescents with gun experience, some heavily involved, were also extremely cognizant of police presence and the consequences of getting arrested while in possession of a gun. While the majority of the gun-experienced adolescents were able to give specific examples of times when they altered their gun-carrying patterns to avoid getting caught and incarcerated, a few actually never carried their guns out of the house for fear of getting caught.

The adolescents perceived that severe penalties would occur if they were caught with a gun and therefore took many measures to avoid this outcome. Some described how they would not carry a gun if others in their group had one, "so we don't [all] get locked up for the same purpose." While some felt that a gun was not necessary for selling drugs, others believed that they and their friends needed guns for protection while involved in this activity.

To avoid a "double charge" (enhanced sentence)—getting arrested for both drug dealing and gun possession—participants described stashing their guns nearby. This is depicted by one youth's answer to the question of why he did not keep the gun on him. He said, "Police. Because police might jump out on me. But I always keep it near in case I get suspicious or for 'stick-up boys.'" The majority of adolescents who discussed stashing guns nearby did so in the context of selling drugs.

While stashing of guns demonstrates the efforts that adolescents will go to to avoid getting caught with a gun, it does not alter the fact that they have almost immediate access to their guns. Several participants, however, were able to give examples where the visibility and presence of police caused them or others to leave their guns elsewhere. One youth recalled a time when police increased their surveillance of a certain area following a shoot-out. During this period, the adolescent elected to leave his gun at a friend's house to avoid getting caught with a weapon.

Even when adolescents carried a gun, about half admitted that carrying guns sometimes made them anxious. Much of this anxiety stemmed from concern about getting caught with a gun, either by a family member or, more commonly, by the police. As expressed by one youth, "It had my heart beatin' fast. I don't know why. I didn't want it to be in my hand . . . I didn't want to have it. I didn't want to get caught with it, be asked for it." Another recalled, "To tell you the truth, it make me feel worried 'cause sometime I be walking . . . I do worry about police stopping me."

In addition to not wanting to get arrested themselves, almost 10% of the participants reported storing a gun out of the home or avoiding use of a family gun to prevent relatives from getting arrested if the police were to find the gun.

©2001 American Medical Association. All rights reserved.
Downloaded From: http://archpedi.jamanetwork.com/ on 05/04/2016

Opinions of Others

The opinions of others, both friends and relatives, prevented a number of these participants from acquiring guns. In addition, some of those who owned guns did not carry them at certain times and in certain places, out of respect for friends and relatives who did not approve of such activities. Interestingly, it was almost exclusively female relatives and friends—mothers, grandmothers, aunts, girlfriends, and girlfriends' mothers—who exerted this influence on the youths' gun-carrying practices. An example is the youth who would not allow his friends to bring their guns into his grandmother's house out of respect for her.

Hurting Self or Others

Almost one third of the gun-experienced adolescents and one half of those without such experience cited concern about hurting themselves or others as a reason why they sometimes avoided guns. A few respondents expressed concern that gun possession could increase their risk of being injured, either through unintentional discharge of their own gun or because it made them more likely to be a target of others with a weapon. While one gun-experienced youth voiced this concern, it was more likely to deter gun involvement for those youth who had no prior experience with guns. As expressed by one youth: "It's unsafe. You can fall and it can go off."

Even more commonly reported was the concern about causing physical harm to others with a gun. This concern was mentioned somewhat more frequently by those who had never possessed a gun than by youths who had owned guns. Gun-experienced adolescents specifically identified those individuals around whom they would refrain from carrying a gun. Quite striking was that about a quarter of gun-experienced adolescents specifically described not carrying a gun around younger family members or friends to prevent these children from inadvertently being injured by the adolescent's gun. One revealed how, because of his younger siblings, he did not keep his gun in the house: "You ain't supposed to keep a gun loaded in the house. I got little brothers. . . . " Another youth stated he would not carry a gun to his baby's mother's house. The reason being "Her little brothers. . . . They nosy . . . like playin' with stuff. They may find it, play with it, and one get shot."

No Need for a Gun

Although it could be argued that adolescents are motivated to acquire or carry guns when they have a need for one rather than prevented from doing so when the need is lacking, we include having no need for a gun as a preventive factor as it was frequently mentioned in this context by the youth. In fact, more than half of the participants cited having no need for a gun as a reason for either not owning one or for not carrying it in certain situations. In most cases, this lack of need was situational and determined by different factors for different youth.

Gun-experienced adolescents described not carrying guns to places and during times when they perceived a low risk of being victimized by violence. Some felt that they did not need it when in their home environment: "It ain't like that where I live. I just ain't need it." Others were less likely to carry a gun in places where the threat of violence was diminished, such as outside of the city. A few revealed that they were less likely to carry a gun during the daylight hours. Others felt no need to carry a gun during times when they were with others who had them. Such associations offered a sense of protection without taking on the risks associated with personally carrying a gun.

Some adolescents created their own safe environments through involvement in sports and the avoidance of high-risk activities such as drug selling. This is demonstrated by one youth's response to the question of what kept him from carrying a gun: "Doin' things with my friends. Liftin' weights, playing basketball, doin' something fun." A second youth responded that he did not carry his gun most of the time because he "wasn't catching beef with anybody." Another revealed that he did not carry a gun because he was safe because he did not sell drugs.

Balancing Risks and Benefits

The decision to acquire or carry a gun at times involved weighing the perceived benefit of protection against the risks associated with possessing a gun (eg, the risk of getting caught, disrespecting the opinions of meaningful individuals, or hurting another). In particular, a number of gun-experienced adolescents were able to describe specific times when, after balancing the aforementioned risks against their perceived need for protection, they chose not to carry their firearms with them. For example, one youth described how he did not carry a gun during the day because he was more likely to get caught by the police and had a low risk of being attacked by his enemies. However, he did carry a gun at night when he perceived a lower likelihood of getting caught by the police and a higher likelihood of being attacked by neighboring groups. As he stated: "I don't have it [a gun] during the days. . . . 'Cause other streets come shootin' at us at night, not during the daytime. . . . [During the day], I'd get caught, police, know what I'm sayin'? I know I could get away at nighttime."

When the balancing of risks and benefits favored gun carrying, almost a third of the gun-involved participants expressed a sense of conflict that resulted from carrying. For example, one respondent expressed how he felt when he carried a gun by saying, "It mess with my conscience. I know it's wrong, but I ain't trying to be no victim." A second adolescent said that carrying a gun made him feel "safe and in danger." As put by another, "In a way you feel scared. In a way you feel like you're the biggest, baddest person in the world."

COMMENT

Despite the high level of gun involvement in this sample of incarcerated adolescents, we found several factors that reduced their exposure to firearms by limiting their gun acquisition and carrying. In this sample of high-risk youth, demand-side factors—things that dampened the adolescents' desire to acquire or carry a gun—were much more

©2001 American Medical Association. All rights reserved.
Downloaded From: http://archpedi.jamanetwork.com/ on 05/04/2016

important obstacles to gun involvement than were supply-side factors—things that affected the ability of the youth to acquire a gun.

The 2 most commonly cited reasons for not wanting to acquire or carry a gun were fear of arrest and incarceration, and feeling safe. For some, feeling safe was connected with their involvement in activities that reduced their exposure to delinquent activities and peers. Others attributed their diminished desire for a gun to being in a relatively safe environment (eg, being in a nonurban area). While not proof of causality, these findings support efforts to involve youth in prosocial activities and to create a sense of safety in their environment. As a number of youth appeared to weigh the risks and benefits associated with gun possession, efforts to reduce the perceived need for protection may increase the effectiveness of other deterrent factors.

The incarcerated youth in this study also reported being aware of and responsive to police efforts to suppress gun carrying. Strong desires to avoid arrest and incarceration deterred some youth from having any involvement with guns, but more commonly led to a reduced frequency of gun carrying among those who had owned guns. While these findings highlight the potential benefit of police efforts to suppress gun carrying, the benefits of such efforts could be diminished by the youths' common practice (particularly when selling drugs) of stashing their guns nearby. Police efforts to search areas surrounding youths suspected of illegally possessing guns could potentially reduce youths' exposure to firearms and thereby enhance public safety.

There are several potential limitations to this study. Because the purpose of the study was to examine high-risk youths' perceptions about what kept them from acquiring or from carrying guns, we had to rely on self-reports of unknown validity. Some youths may not have good insight into what determined their past behavior. In addition, delinquent youths sometimes may not be entirely truthful in their responses out of desire to shock or impress interviewers or to conceal undesirable beliefs or behavior. To minimize these potential problems, we took a variety of measures to encourage the most honest and complete responses, including asking questions in a nonjudgmental way, interviewing participants individually, and assuring anonymity of responses.

Other limitations of this study are common to qualitative research of this type. The relatively small sample size and semistructured nature of the interviews limited our ability to formally test hypotheses about the associations between variables of interest. In addition, the generalizability of these findings to other, high-risk groups is uncertain, given that the sample was drawn from a single youth correctional facility. Nevertheless, our findings on issues that have been previously investigated are consistent with prior research on high-risk youth. For example, our findings concerning the links between involvement in delinquent activities, perceived risk of serious victimization, and gun acquisition and carrying have been found in previous studies of high-risk youth.[7-9] Similarly, the relative ease of accessing a firearm reported by this sample of incarcerated youth is consistent with the findings from other studies of high-risk youth.[7,9] Our findings about the responsiveness of youth to police efforts to suppress illegal gun carrying are also consistent with recent evaluation studies of police interventions of this type. Police efforts to increase the risk of arrest for illegal gun possession have been credited with significant reductions in youth homicides in Boston, Mass,[22,23] overall homicides in New York City,[24] and shootings in Kansas City, Mo.[25] While not all studies of police gun carrying suppression tactics reveal unambiguous reductions in violent crime,[26] our findings are largely consistent with other research and suggest that the police can reduce gun carrying among high-risk youth.

The decision to acquire or carry a gun is a complex one that is likely to be driven both by motivators and deterrents. While we identified factors that youth perceived limited their gun acquisition and carrying, we did not examine the relative importance of the factors that either encourage or discourage youth gun involvement. Future research should examine the dynamic relationship between the identified factors that prevent gun acquisition and carrying and those that motivate these high-risk behaviors.

The findings of this study also have implications for educational interventions designed to reduce gun involvement among high-risk adolescents. Based on these reports by high-risk adolescents, the gun-involvement risks that might be underscored in communications with youth are those involving arrest and incarceration and unintentionally harming innocent others such as young children. Health care providers have a unique opportunity to discuss these risks with adolescents during anticipatory guidance sessions as well as during acute visits related to interpersonal injury.[27-29] Our findings also suggest that parents, other respected family members, and girlfriends may be persuasive in dissuading youths from gun involvement. Health care providers can encourage family members to voice their disapproval of gun possession and carrying, a message that our findings indicate is likely to limit the gun involvement of some youths. While others have demonstrated that adolescents who had engaged in discussions with their parents about guns were less likely to carry guns when compared with those who did not have such discussions,[17] outcome studies are necessary to evaluate the effectiveness of such health care interventions.

Among this group of incarcerated adolescents, supply-side factors were less important in terms of limiting gun acquisition. This may be a reflection of the fact that the study sample was composed of delinquent youth, who are more likely than other youth to be knowledgeable about sources of guns and have better connections to those sources. For the most part, guns could ultimately be acquired by the youth in this study. However, depending on the youth and the type of gun, this acquisition was not always immediate or simple. Consequently, for some participants, there was a delay in the time it took to locate a source and therefore to acquire a gun. The degree to which such a delay translates into fewer firearm injuries is currently unknown; however, such a delay might serve to reduce the number of impulsive shootings.

Finally, there were clearly inexpensive options for price-sensitive youth who wanted to acquire a gun. But

©2001 American Medical Association. All rights reserved.
Downloaded From: http://archpedi.jamanetwork.com/ on 05/04/2016

for those who had a preference for a new gun or for specific kinds of guns (eg, high-capacity automatics), cost was a barrier that sometimes, at the least, postponed acquisition of the gun. Consistent with the findings of a previous study of youthful offenders in Boston,[22] many adolescents have a strong preference for new guns, in part out of concern that they could be charged with prior crimes committed with used guns. This finding suggests that efforts to regulate new guns could have a significant effect on gun acquisition by some adolescents, even though there appeared to be a large supply of inexpensive used guns available for sale from private individuals in this metropolitan area of Maryland.[19,22]

In conclusion, this study provides richer insight than previous studies into the factors that affect the decisions and actions of adolescents with respect to guns. It will be important to conduct additional research in other populations to determine if the themes identified in this study are consistent. The true test will be whether interventions that incorporate these self-identified limiting factors are powerful enough to actually reduce gun acquisition and carrying.

Accepted for publication September 3, 2000.

Dr Freed was supported by a grant from the Robert Wood Johnson Clinical Scholars Program, Princeton, NJ, and the Annie E. Casey Foundation, Baltimore, Md. Dr Webster's work was supported by a grant from The Joyce Foundation, Chicago, Ill, to The Johns Hopkins Center for Gun Policy and Research.

We would like to thank Philip Cook, PhD, Sheldon Greenberg, PhD, and Stephen Vicchio, PhD, for their assistance in the design of this project, Jaime Wakefield for her assistance with data collection, and Shannon Frattaroli, PhD, MPH and S. Jean Emans, MD, for their thoughtful input and careful review of the manuscript. We would also like to acknowledge the assistance of the Maryland Department of Juvenile Justice.

Corresponding author and reprints: Lorraine H. Freed, MD, MPH, Division of Adolescent/Young Adult Medicine, Children's Hospital, 300 Longwood Ave, Boston, MA 02115 (e-mail: freed_l@a1.tch.harvard.edu).

REFERENCES

1. Bureau of Justice Statistics. Homicide trends in the United States. Available at: www.ojp.usdoj.gov/bjs/homicide/weapons.html. Accessed January 12, 2000.
2. Blumstein A, Cork D. Linking gun availability to youth gun violence. *Law Contemp Probl*. 1996;59:5-24.
3. Zimring F, Zuehl J. Victim injury and death in urban robbery: a Chicago study. *J Leg Stud*. 1986;15:1-40.
4. Saltzman L, Mercy J, O'Carroll P, Rosenberg M, Rhodes P. Weapon involvement and injury outcomes in family and intimate assaults. *JAMA*. 1992;267:3043-3047.
5. Blumstein A. Violence by young people: why the deadly nexus? *Natl Inst Justice J*. August 1995:2-9.
6. Kann L, Kinchen S, Williams B, et al. Youth risk behavior surveillance—United States, 1997. *MMWR Morb Mortal Wkly Rep*. 1998;47:1-89.
7. Sheley J, Wright J. *Gun Acquisition and Possession in Selected Juvenile Samples*. Washington, DC: US Dept of Justice; 1993.
8. Webster D, Gainer P, Champion H. Weapon carrying among inner-city junior high school students: defensive behavior vs aggressive delinquency. *Am J Public Health*. 1993;83:1604-1608.
9. Ash P, Kellermann A, Fuqua-Whitley D, Johnson A. Gun acquisition and use by juvenile offenders. *JAMA*. 1996;275:1754-1758.
10. Violent Crime Control and Law Enforcement Act of 1994. Pub L No. 103-322, 108 Stat 2010.
11. The Gun Control Act of 1968, 18 USC §921-930.
12. Bergstein J, Hemenway D, Kennedy B, Quaday S, Andes R. Guns in young hands: a survey of urban teenagers' attitudes and behaviors related to handgun violence. *J Trauma*. 1996;41:794-798.
13. Callahan C, Rivara F. Urban high school youth and handguns: a school-based survey. *JAMA*. 1992;267:3038-3042.
14. Callahan C, Rivara F, Farrow J. Youth in detention and handguns. *J Adolesc Health*. 1993;14:350-355.
15. Sheley J, Wright J. *High School Youths, Weapons, and Violence: A National Survey*. Washington, DC: US Dept of Justice; 1998.
16. Wilkinson D, Fagan J. The role of firearms in violence "scripts": the dynamics of gun events among adolescent males. *Law Contemp Probl*. 1996;59:55-89.
17. Hemenway D, Prothrow-Stith D, Bergstein J, Ander R, Kennedy B. Gun carrying among adolescents. *Law Contemp Probl*. 1996;59:39-53.
18. Cook P, Cole T. Strategic thinking about gun markets and violence. *JAMA*. 1996;275:1765-1767.
19. Cook P, Molliconi S, Cole T. Regulating gun markets. *J Crimin Law Criminol*. 1995;86:59-91.
20. *QSR NUD*IST 4.0* [computer program]. Redmond, Wash: Microsoft Corp; 1997.
21. *SPSS 8 for Windows*. Chicago, Ill: Statistical Product and Service Solutions; 1997.
22. Kennedy D, Piehl A, Braga A. Youth violence in Boston: gun markets, serious youth offenders, and a use-reduction strategy. *Law Contemp Probl*. 1996;59:147-196.
23. Kennedy D. *Juvenile Gun Violence and Gun Markets in Boston*. Washington, DC: US Dept of Justice; 1997.
24. Fagan J, Zimring F, Kim J. Declining homicide in New York City: a tale of two trends. *J Crimin Law Criminol*. 1998;88:1277-1323.
25. Sherman L, Shaw J, Rogan D. *The Kansas City Gun Experiment*. Washington, DC: US Dept of Justice; 1995.
26. McGarrell E, Chermak S. *Summary of Results of JPD's 1997 Directed Patrol Initiative*. Indianapolis, Ind: Hudson Institute; 1998.
27. Ginsburg K. Guiding adolescents away from violence. *Contemp Pediatr*. 1997;14:101-111.
28. Stringham P. Violence anticipatory guidance. *Pediatr Clin North Am*. 1998;45:439-448.
29. Webster D, Wilson M. Gun violence among youth and the pediatrician's role in primary prevention. *Pediatrics*. 1994;94(suppl):617-622.

©2001 American Medical Association. All rights reserved.
Downloaded From: http://archpedi.jamanetwork.com/ on 05/04/2016