Guns in The Bahamas: 
(1) Firearms in Bahamian homes

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Abstract
An Internet survey of 1,281 Bahamians was used to obtain information on the number of firearms in Bahamian homes, and assess linkages between firearms and domestic violence in the home. The rate of firearm ownership is estimated at 8.8 guns per 100 persons and guns were found in between 19% and 31% of households. Richer households owned more guns than poorer households. Both household income and the presence of a gun were associated with domestic violence in homes. The level of gun ownership is discussed in the context of a society with an increasing number of homicides and where residents are demanding firearms for protection.

Introduction
In 2010, the media reported the Commissioner of Police for The Bahamas as stating that there were 15,545 licensed shotguns and 1,565 rifles (no figure was given for the number of hand guns) in the country, and that these were a “noticeable increase” (para. 1) on the previous year (Rolle, 2010). A firearm is, by its very design, intended to inflict harm on animals, human or non-human. The danger which guns can pose is well recognized and a whole chapter (213) is devoted to firearms in the Statute Laws of The Bahamas (Bahamas Government, 2007). The recognition that firearms need careful regulation is related to the need to control or manage the number of guns in society. In Brazil, regulation and enforcement of gun controls is credited with a substantial decrease in firearm related violence (de Souza et al., 2007). This is important because in the United States of America (USA), Gius (2009) demonstrated that higher rates of firearm ownership are associated with higher rates of homicides while Altheimer (2008) noted a similar result for assaults. These findings are of concern in a country with a homicide rate which
has increased in recent years (Plumridge & Fielding, 2009) and where even in 2004 the United Nations Statistics Division reported the intentional murder rate as 13.7 per 100,000, which placed The Bahamas 22nd in a list of 133 territories (United Nations Office on Drugs and Crime, 2010). These figures do not account for the economic cost of violence. Turnquest (2010) reported that at the main public hospital in New Providence that ‘trauma - secondary to criminal activity - is taking a "major toll" on the health care system’ (para 2). While the cost of gunshot injuries has not been quantified for The Bahamas, in the USA, the tax payer pays almost half of the cost of the medical bills associated with gunshot injuries (Cook, Lawrence, Ludwig, & Miller, 1999) and in South Africa, treatment of gunshot injuries to the abdomen alone consume almost 4% of the annual health budget (Allard & Burch, 2005).

In The Bahamas, while it is possible for a person to get a license for a range of firearms, the most common weapon which can be legally owned by the general public is a shotgun; obtaining a license for a handgun requires what is called a “special licence” (Government of The Bahamas, 2007). Consequently, if a household has a licensed firearm it would be expected to be used for hunting. However, as Brennen, Hutcheson, & Carroll (2011) have pointed out, the majority of these hunting weapons are kept with the primary purpose of protection, i.e. to shoot people. The need for the citizenry to arm itself for protection appears to be based on Lott’s (2000) proposition that an increased gun ownership should reduce crime, an idea which was not supported in a study by Branas, Richmond, Culhane, Have and Wiebe (2009).

Although the police make background checks on potential gun owners (anyone who “is of intemperate habits or unsound mind, or is otherwise unfitted to be entrusted with such a firearm”
or under 18 years of age is prohibited from owning a firearm, amongst other restrictions) (Government of The Bahamas, 2007), there is no psychological testing of license applicants to ensure that they are psychologically stable nor is there firearm safety training. Further, there appears to be no formal mechanism to stop an abuser, or perpetrator of domestic violence from purchasing a weapon, despite the link between gun ownership and victimisation which has triggered restraining orders in the USA (Vittes & Sorenson, 2008).

Despite the restrictions on guns, it should be noted that guns are kept and used illegally. Guns are the number one choice of weapon used in murders (Hanna, 2005) and the police confiscate many weapons annually (Figure 1). The recent surge in confiscated weapons could be due to extra vigilance on behalf of the authorities, and/or represent an increase in the number of illegal weapons in circulation. Either way, the presence of illegal weapons in society is of concern.
The introduction of a firearm into a home can confer power, to harm or not to harm, to the person who controls the weapon. The power associated with a gun in the household has been noted by Doherty and Hornosty (2008) where homes with firearms were at higher risk of having domestic violence than those without a firearm. The Bahamas is considered to have a high rate of domestic violence (Brennen et al, 2010) and so the association between gun ownership and domestic violence identified in North America may be a matter of concern here if women are to be adequately protected from femicide where gun ownership is an elevating risk factor (Campbell et al., 2003). Further, as stated by Sprinkle (2007) “Research documents that children raised in homes where domestic violence is present are far more likely to replicate the cycle of
violence in their own relationships” (p.145). Consequently, the effects of gun ownership in today’s homes, may be evident in future generations.

Accordingly, there are important implications, both inside and outside the home to residents owning guns. At one level, there are the harmful uses within society to which guns can be put, and at another level, the presence of a gun in a home can lead to violence within the home which may affect both adults and children. These aspects alone require that the ownership of weapons be studied to appreciate what occurs at a national level.

**Study purpose**

There appears to have been no prior research on gun ownership in The Bahamas, so this study focused on ownership of guns in Bahamian households. Its purpose was to ascertain the prevalence of guns in Bahamian society, to compare homes which do and do not have guns, to describe the guns kept in homes and to describe the person who controls a gun in the household. Questions were asked about the childhood of the person who controls a gun to identify possible links between his/her upbringing and adult behaviour. Therefore, the questionnaire enabled a number of research questions to be asked which included: (1) Are homes with guns different to guns without homes? (2) Are guns used for the purposes permitted by the conditions of their firearm license? And, (3) Do childhood experiences have influences on the behaviour of the person who controls the gun which may be a cause for concern? This paper will focus on the first of these research questions. Carroll, Brennen and Hutcheson (2011) and Brennen, Hutcheson and Carroll (2011) address research questions (2) and (3) in related papers.
The research project was carried out with the consent of the Office of Research, International Relations and Graduate Programmes of The College of The Bahamas.

**Methodology**

A survey form was devised which looked at three components of gun ownership:

1. Economic and behavioural characteristics of the home,
2. Characteristics of the person who controls the gun (when more than one gun was in the home, the respondent was asked to given information about just one person who controlled a gun) and
3. Information about the gun itself (when more than one gun was in the home, the respondent was asked to give information about just one gun which was controlled by the person identified in (2)).

Demographics of the person who completed the form were included so that only respondents who were Bahamian citizens living in The Bahamas, our target population, would be included in the analysis. The HITS© screening tool (Sherin, Sinacore, Li, Zitter & Shakil, 1998) was used to classify the presence/absence of domestic violence in the home. An outline of the areas covered in the questionnaire is given in Table 1.
Table 1: Outline of the survey form used.

<table>
<thead>
<tr>
<th>Demographics of the respondent:</th>
<th>Age, sex, citizenship, usual place of residence</th>
</tr>
</thead>
<tbody>
<tr>
<td>About the household:</td>
<td>Income, occurrence of domestic violence, sexual abuse, killing of companionable animals, hitting of children as a means of discipline, household is considered “loving”.</td>
</tr>
<tr>
<td>Guns in the home:</td>
<td>Number, type. On one selected gun (which we term the “reported” firearm): source, license status, availability of gun to be used.</td>
</tr>
<tr>
<td>Demographics of the person who controls a gun</td>
<td>Sex, age, upbringing, primary purpose of the firearm (including information on hunting habits), characteristics of the person who controls the gun (criminal activities, behaviours towards other members of the household), employment status.</td>
</tr>
</tbody>
</table>

The survey was posted on Survey Monkey™. In Spring 2010 students from several Social Science classes contacted people by email to solicit participation in the study. These contacts were also asked to forward the survey link to their friends, thereby using a snowball sampling technique. Students were given credit for participation in the solicitation of respondents.

This non-probabilistic sampling method prevents us claiming that the respondents were “representative” of the wider community of The Bahamas, but this does not invalidate associations within the respondent group. A 2009 study using a random sample of school students, in primary and secondary public schools, found that over 63.7% of primary students and 71.2% of high school students had access to the internet at home (Bahamas Ministry of Education & College of The Bahamas, 2009). In 2008, the United Nations Statistics Division (2009) estimated that 31.5% of the population of The Bahamas used the Internet. While not every home has internet access, it is widespread and possibly increasing. Gosling, Vazire, Srivastava and John (2004) in the USA found that internet based surveys may result is some biases, but that they may not necessarily be any more biased as other survey methods which rely
on self selected participants. As a check on the reliability of the data from this study, a simple survey of College of The Bahamas students was undertaken this asked if there was a gun in the household. Students visited classes, with the permission of the lecturer, selected through a convenience sample. Of 413 respondents, 29.3% knew that there was a firearm in the home, 58.9% said no, and the remainder either did not know or did not respond. These figures compare with another internet survey by Fielding et al. (2011) which reported firearms in 26.0% of 1,308 homes. While the police know the number of licensed firearms are in the population (Rolle, 2010), they do not appear to release information on the percentage of homes with firearms.

A total of 1,813 replies were received. Some of these were sparsely answered and others appeared to be duplicates (possibly because the participants may have thought that their first submission failed). As the purpose of the study was to examine gun ownership in The Bahamas by Bahamians, only responses from Bahamians living in The Bahamas were retained in the analysis. Consequently after cleaning the data, we report on 1,281 responses.

Results

Of the 1,281 respondents, 53.0% (679) were members of the general public, 44.3% were college students and 2.7% college employees. The majority of respondents were female (64.4%) and the modal age group was 18-20 years (42.1%) and 68.1% were aged under 26 years. The median household income (of 1,144 respondents) was $41,072. Some respondents knew that there was a firearm in the home while others thought probably yes, and others probably no. We focus on those homes in which respondents either knew the number of guns in the home, or thought that there was at least one in the home (which we term homes with guns). Firearms were reported to
be or thought to be in 23.0% (of 1,281) of respondent homes. This proportion of homes was similar across the Bahamas (New Providence, Grand Bahama, Family Island), \(\chi^2(2, N=1,281)=3.8, p=.15\). The median number of firearms per home was 1.0 and 18.6% of 295 homes had more than one gun, giving a mean of 0.30 (\(SE=.020\)) per household. When the gender of the respondent was taken into account, females were less likely than males to report weapons were in the home (18.9% compared with 30.5%, *Fishers exact test*, \(N=1,281, p<.001\))

Firearms were present in homes in all income brackets. Homes with firearms had higher household incomes than those without firearms, \(\chi^2(5, N=1,144)=23.9, p<.001\) (Table 2). The primary purpose for having a firearm was similar across all income groups, namely that the reported firearm was wanted for protection (76.7% of 240 responses) and the remainder for hunting, \(\chi^2(5, N=240)=1.9, p=.87\).

<table>
<thead>
<tr>
<th>Household income</th>
<th>At least one firearm in the home</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No, probably no</td>
<td>Yes, probably yes</td>
</tr>
<tr>
<td>&lt;$10,000</td>
<td>84.1%</td>
<td>15.9%</td>
</tr>
<tr>
<td>$10,001-20,000</td>
<td>84.0%</td>
<td>16.0%</td>
</tr>
<tr>
<td>$20,001-$40,000</td>
<td>80.5%</td>
<td>19.5%</td>
</tr>
<tr>
<td>$40,001-$60,000</td>
<td>74.6%</td>
<td>25.4%</td>
</tr>
<tr>
<td>$60,001-$80,000</td>
<td>77.8%</td>
<td>22.2%</td>
</tr>
<tr>
<td>&gt;$80,001</td>
<td>64.8%</td>
<td>35.2%</td>
</tr>
</tbody>
</table>

When a firearm was in the home there was an increased risk of domestic violence occurring (OR (gun vs. no gun in home) =1.42; 95% CI [1.06-1.89) from 25.1% (of 957 homes), no firearm, to 32.2% (of 286 homes), at least one firearm. A logistic regression to assess the presence of weapons and income on domestic violence found that while income was an important predictor
of domestic violence, gun ownership was, in its own right was a useful predictor, although it just failed to be so at the standard level of statistical significance of 0.05 (Wald statistic (W) for gun ownership, $W=3.5$, $df=1$, $p=.06$, and income, $W=14.3$, $df=5$, $p=.014$).

Respondents who lived in homes with a firearm were less likely to think that they lived in a “loving” household than when a gun was not in the home, with 88.6% of them responding yes, compared to 84.9% when guns were in the home; of interest was that while 8.3% were “not sure” when a firearm was not present this increased to 13.1% when a firearm was present, $\chi^2(2$, $N=1,277)=6.51$, $p=.039$), (Table 3). However, a multinomial regression to assess the influence of both income and the presence of a gun in the home and the association of the home being “loving”, indicated that income was a more useful indicator than gun ownership (gun ownership, $W=3.3$, $df=1$, $p=.07$, and income, $W=13.6$, $df=5$, $p=.018$).

The occurrence of sexual abuse was similar in homes with and without firearms, $\chi^2(3$,
$N=1,274)=.68$, $p=.88$), with 10.8% of 983 responding yes or definitely yes, when a gun was absent compared with 11.7% of 291 homes when a gun was present. The use of violence to discipline children (those under the age of 18) was less common in homes without firearms and child abuse was lower compared to homes with guns, $\chi^2(2$, $N=878)=6.61$, $p=.048$), Table 4. However, a multinomial regression to assess the influence of both income and the presence of

<table>
<thead>
<tr>
<th>Respondent lives in a loving household</th>
<th>At least one firearm in the home</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No/probably no</td>
</tr>
<tr>
<td>Yes</td>
<td>88.6%</td>
</tr>
<tr>
<td>No</td>
<td>3.0%</td>
</tr>
<tr>
<td>Not sure</td>
<td>8.3%</td>
</tr>
<tr>
<td>N</td>
<td>986</td>
</tr>
</tbody>
</table>
a gun in the home of violence towards children, indicated that gun ownership was a more useful indicator than income (gun ownership, $W=7.4$, $df=1$, $p=.007$, and income, $W=9.6$, $df=5$, $p=.09$).

Table 4: Association between the presence of a gun in the home and violence towards children.

<table>
<thead>
<tr>
<th>At least one firearm in the home</th>
<th>No, probably no</th>
<th>Yes, probably yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, the children are hit</td>
<td>71.6%</td>
<td>63.2%</td>
</tr>
<tr>
<td>Yes, the children are hit</td>
<td>3.7%</td>
<td>6.2%</td>
</tr>
<tr>
<td>and sometimes I would consider this abuse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No, the children are never hit</td>
<td>24.7%</td>
<td>30.6%</td>
</tr>
<tr>
<td>N</td>
<td>669</td>
<td>209</td>
</tr>
</tbody>
</table>

The use of violence to discipline cats and/or dogs was similar in both homes irrespective of the presence/absence of a firearm, pets were hit in 40.4% of 465 homes without guns and 37.4% of 163 homes with guns $\chi^2(2, N=628) = .56$, $p = .76$.

Discussion

Overall, the presence of firearms occurred in 23% of the participants’ homes, a number which is similar, if a little lower, to that reported in earlier studies. This figure may be an underestimate as females were less likely than males to report firearms in the home, a finding already noted by Ludwig, Cook and Smith (1998). If assume that our figures can be applied to the entire Bahamas, and if no adjustment is made for possible under reporting by our female respondents, the data point to a total gun population of around 31,000, or 8.8 per 100 persons (based on a population of 353,658 (Bahamas Information Service, 2010) and an average household size of 3.45 (Department of Statistics, 2002). This rate of gun ownership puts The Bahamas above Jamaica (8.1 per 100 persons) and just below Russia (8.9 per 100 person). The estimate from this
study is higher than that given by Alpers and Wilson (2010) of 5.3\(^1\). Consequently, the citizenry of The Bahamas may be as armed as other countries with a reputation for violence (Harriott, 2003; Forbes, nd.). As such, this may help to explain why the gun is the weapon of choice in homicides (Hanna, 2005). While this level of ownership *per se* may not be a matter of concern, when firearms are linked to increased death, or injury (Turnquest, 2010), it invites a discussion as to the purpose to which firearms are being put, irrespective of the guns being licensed or otherwise.

Additionally, this level of gun ownership requires society to revisit the need to control the availability of firearms as “it is now generally accepted that controlling the legal trade in small arms is critical to combating and preventing the illicit trade in weapons” (Kirsten, 2008, p. 205). As noted in the introduction, the apparent increase in illegal guns would appear to be linked with an increase in the number of licensed firearms in society. The fact that not all once licensed firearms are re-licensed (Carroll, Brennen & Hutcheson, 2011) confirms the leakage of firearms from the legal to the illegal domain. Further, in the USA, it has been found that guns shops can be important suppliers of guns to criminals (Daniel, Jon & Bulzacchelli, 2006) which again points to the need for regulation prior to and from the point of sale onwards.

Firearms were found to be present in homes in each economic group. Even in homes which are probably below the poverty line (expenditure less than $10,000 a year) (Bahamas Department of Statistics, n.d.), about 16% of these homes contained at least one gun, but this figure more than doubled in the highest income homes. Protection seems to be the driving force for keeping

\(^1\)This figure appears to be based on the number of gun licenses.
firearms, even though with shotguns being the most commonly licensed weapon, the designated purpose for the permit would be hunting. This study cannot answer why higher income homes were more likely than lower income homes to own multiple guns, or if the multiple guns were of similar types or otherwise. The use of hunting weapons to protect property and harm humans is regularly reported in the press (for example: Turnquest, 2011) and shotguns are the second commonly used firearm to commit murder (Hanna, 2005). Future research could usefully expand on the socioeconomic aspects of firearm ownership and if different weapons are really owned for different purposes.

The link between household income and other aspects of the home was found, not only of gun ownership, but also domestic violence and the home being considered loving. These latter two aspects, domestic violence and loving homes, were however less associated with gun ownership than household income, once household income was taken into account. This contrasted with the case of violence towards children when the presence of a gun in the home was a stronger predictor than household income. These results also contrast with the finding that gun ownership was not related to the use of violence towards pets. These findings indicate that gun ownership as well as household income can be associated with important aspects of household behaviours. Consequently, while Blank (2005) emphasises the importance of the economic aspects relating to youth and violence, this study shows that gun ownership should not be overlooked when considering violence towards children and other household members.

The association between guns and household income and violence requires the debate in The Bahamas regarding the ownership of firearms to be extended beyond that commonly voiced in
the media with regard to opening up firearm ownership for protection. The literature cited above, together with the results from this study suggest that The Bahamas already has a relatively large number of citizens who are armed. Unless these owners are trained in firearm management (currently there is no requirement that they should), and the behaviour of these owners monitored, these weapons may increase the risk of firearm victims rather than make society (both inside and outside the home) safer. If weapons are licensed for hunting, but not used for that purpose, as suggested by, Carroll, Brennen and Hutcheson (2011), it raises the question as to whether or not these weapons should be recalled by the police. As noted in the literature above, if licensed weapons become a source of illegal weapons and if gun shops supply criminals with weapons, a fundamental debate as to the wisdom of arming citizens needs to be instigated so that the law is aligned with the needs of society, yet also protects society from the misuse of, what is by design, an item designed to cause harm. Such a debate should ultimately inform revised public policies which should reduce the emotional and economic costs of gunshot related violence in the country.

**Limitations of the study**

It should be noted that not-probabilistic samples such as this one can result in samples which may not reflect the wider population from which the sample was drawn. While little is known about the biases in internet samples in The Bahamas, evidence from the USA suggests that they may not be any more biased than other self-selected samples. The median household income in our sample was $41,072 which compares with a mean household income of Bahamian homes of $39,914 obtained in the 2000 census (Bahamas Department of Statistics, n.d), particularly if one considers that the census data are 10 years old. This suggests that despite the non-probabilistic
nature of the sample, respondent households had a household income which was not greatly
different to the wider population. As income is associated with gun ownership, this point of
similarity suggests that in at least one important aspect that our sample may be representative of
the wider population. Including more female than male respondents in the study appears to be a
feature of surveys in The Bahamas where no quota is set on the sample, for example: Fielding
and Samuels (2002). Studies on gun ownership are limited by the knowledge of respondents on
the presence of a gun in the home. Given the sex differences in reporting on weapons noted in
this study, future studies may need to focus of personal gun ownership, rather than household
gun ownership.

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