UCONN CENTER FOR
ADVANCING RESEARCH, METHODS, AND SCHOLARSHIP IN GUN INJURY PREVENTION

A brief prepared by the UConn ARMS Center
MARCH 2024

The Harms and Benefits Inventory: Initial Validation of a Novel Assessment of Perceived Harms and Benefits of Firearm Policies and Practices

Authors: Damion J. Grasso, Kerri M. Raissian, Mitchell Doucette, Austen Bradley McGuire, and Jennifer Necci Dineen

PURPOSE

The effectiveness of firearm policies is dependent on gun owners and sellers changing their behavior. However, influencing the stakeholders to make changes is challenging, as they often perceive that government policies constrain their Second Amendment rights and compromise their safety and freedom.

While consensus exists on the need to reduce firearm-induced injury in the United States, American citizens and lawmakers disagree about which policies can do so successfully. To achieve successful uptake of any policy, discussion and development must be citizen-informed, and researchers must therefore better understand gun owners' and sellers' perceptions and find tools to study and express them to help make meaningful change.

BACKGROUND

Understanding gun owners' perceptions of potential firearm policies' harms and benefits is critical to successful policy development and implementation. While gun lobbying groups like the National Rifle Association heavily influence policy discussions, they do not represent the preferences of all gun owners. Gun owners are a diverse group, and their preferences may diverge from those captured by large lobbying groups.

Researchers Damion J. Grasso, Kerri M. Raissian, Mitchell Doucette, Austen Bradley McGuire, and Jennifer Necci Dineen therefore sought to capture the nuances of firearm owners' perception by validating a novel instrument. The resulting Harms and Benefits Inventory (HBI) is a tool policymakers can use to survey citizens and better craft firearm safety laws and regulations.

METHOD

The researchers administered a preliminary HBI survey to a nationally representative group of 2,007 American gun owners and non-owners using the SSRS probability panel. The survey included 31 items that were candidates to be included in the final HBI instrument. The questions asked respondents about gun ownership, exposure, storage, carry behaviors, and policy positions.

The researchers generated the initial candidate items based on work proposing that firearm policies' impact on gun owners can be summarized by their benefits, opportunities, costs, and risks. Using the framework and their own expertise, the authors identified items representing specific policy or practice outcomes.

Survey respondents might perceive each item as harmful or beneficial. They rate the items from 0 to 10, where 0 means completely oppose a policy or practice with the stated outcome (e.g., require a permit to purchase a gun), 10 means completely support, and 5 means neither support nor oppose. Relatively low or high scores, therefore, reflect each respondent's degree of opposition or support of policies with the stated impact.

In addition to the initial 31 items, the survey includes questions assessing sociodemographic characteristics and contextual factors. Identified factors are used to create scale composites allowing examination of internal consistency reliability and concurrent validity using the full survey sample. While the researchers sought primarily to understand gun owners' perceptions, they also made comparisons between owners and non-owners—specifically whether the groups agreed with statements about firearm possession, open carry, and storage.

The team conducted exploratory factor analyses (EFA) on responses to the 31 initial HBI items from a randomly selected subsample of 1,003 respondents and tested the results with a confirmatory factor analysis on data from the second half of the sample (1,004 respondents).

RESULTS

In examining responses to the initial 31 HBI items, the researchers find 21 that best fit the EFA model. The resulting instrument (see Table 1) can be used to gauge citizen perceptions about firearm policies.

TABLE 1 THE FINAL 21-ITEM HARMS AND BENEFITS INVENTORY SURVEY

1. Increases the cost of ammunition
2. Increases the cost to purchase a gun
3. Reduces the number of available licensed gun dealers
4. Makes it more difficult to drive across state lines with a gun
5. Increases the time it takes a person to get to and ready a gun in their home
6. Increases government regulation of how guns are handled
7. Makes it more difficult for a person convicted of violent misdemeanors, such as simple assault to own a gun
8. Makes it more difficult for a person with minor, non-violent legal offenses to own a gun
9. Makes it more difficult for a person convicted of domestic violence to own a gun
10. Makes it more difficult for a person with serious mental health problems to own a gun
11. Makes it more difficult for a person with mild mental health problems to own a gun
12. Requires a permit to purchase a gun
13. Makes it easier to purchase a gun without a permit
14. Requires gun users to receive continuing education around gun safety
15. Requires new gun owners to demonstrate knowledge of gun safety
16. Allows a person with a history of violent behavior to obtain a gun
17. Allows a person with a domestic violence conviction to obtain a gun
18. Allows a person with serious mental health problems to obtain a gun
19. Allows a person with a felony conviction to obtain a gun
20. Makes it easier to participate in hobbies such as gun collection and restoration
21. Makes it easier to participate in shooting sports

Each item in the policy-neutral HBI instrument can be further understood as relating to five key domains reflecting the way survey respondents believe a policy is relevant to: (1) firearm regulation, cost, and accessibility, (2) special firearm restrictions, (3) firearm permits and education, (4) relaxed firearm restrictions, and (5) firearm hobbies and sports. The five domains include the following:

1. Regulation, cost, and accessibility includes items in which the policy or practice would increase firearm acquisition or ownership costs, including ammunition and opportunity costs.

2. Special restrictions include policy outcomes that prevent certain individuals from purchasing or owning a firearm.
3. Permit and education includes policy outcomes related to licensure, demonstrated competency, and ongoing education.
4. Relaxed restrictions reflect policy outcomes that remove restrictions and expand gun access.
5. Hobbies and sports include outcomes that make it easier to collect guns and participate in recreational shooting activities.

The researchers upheld the best-fitting EFA model, included the final 21 items and five underlying factors, using the confirmatory factor analysis. Internal consistency was good to excellent within each of the five scales. Validity was supported using correlations between the HBI scales and survey questions. As expected, the five factors were significantly correlated. Subscales containing items that focused on restricting access (regulation, cost, and accessibility, special restrictions, and permit and education) were positively correlated among themselves but negatively correlated with relaxed restrictions and hobby and sport, which were positively correlated (see Table 2).

TABLE 2 HBI FACTOR CORRELATION IN EFA ITERATIONS

	1	2	3	4	5
Factor 1. Regulation, Cost, & Accessibility	—				
Factor 2. Special Restrictions	0.59***	—			
Factor 3. Permit & Education	0.68***	0.68***-	—		
Factor 4. Relaxed Restrictions	-0.22***	-0.51***	-0.41***	—	
Factor 5. Hobby & Sport	-0.70***	-0.43***	-0.49***	0.32***	—

* = p < .05, ** = p < .01, *** = p < .001

DISCUSSION

HBI is a self-reported instrument that assesses perceptions of potential harms and benefits of firearm policies and practices. The researchers' novel HBI instrument is unique in its ability to inform lawmakers by assessing perceptions of firearm policies' potential harms and benefits.

Understanding perceptions of gun policies' potential harms and benefits at the time of development or implementation can improve uptake and reduce unintended consequences. Lawmakers and regulators can use HBI to better predict how individuals will react to proposed policies. The researchers further suggest that HBI subscale scores may be useful in studying and understanding differences in firearm perceptions by sociodemographic characteristics, region, and political perspective.

Improving knowledge of gun owner perceptions is critical because firearm policy has been shown to rely strongly on stakeholder buy-in and commitment to behavior change. Without such changes, interventions have historically failed or lacked sustainability. Despite HBI's strengths, the researchers are unable to evaluate the measure's predictive validity. This, along with efforts to test for measurement invariance among certain U.S. sub-populations and research considering HBI subscales in relation to specific policies and practices, are ideal areas for future study.

This brief is a summary of a published paper available at https://injuryprevention.bmj.com/content/early/2024/03/21/ip-2023-045073. To cite this brief: Grasso, D.J., Raissian, K.M., Doucette, M., McGuire, A.B., and Dineen, J. (2024, March). "The Harms and Benefits Inventory: Initial Validation of a Novel Assessment of Perceived Harms and Benefits of Firearm Policies and Practices." Storrs, CT: UConn Center for Advancing Research, Methods, and Scholarship (ARMS).