Firearm Related Injury & Violence Prevention

Samuel N. Forjuoh, MB, ChB, DrPH
Associate Professor
Department of Family & Community Medicine
10th Semi-Annual Trauma Symposium
Temple, April 26, 2000
Goals

- Epidemiological basis to understanding violence prevention and firearm safety.
- Types of violence, firearm ownership rates & firearm storage practices.
- The public health approach to violence prevention and gun safety.
Gallup Poll

- How many of us have at least one firearm in our households?
- How many of us have heard about and/or seen a gun lock before?
- How many of us always lock our firearms unloaded?
How many of us are willing to tolerate a person who introduces cholera germs in the city water, educates everyone to boil their water before drinking it, and then blames anyone who contracts cholera?
How many of us are willing to tolerate a person who creates a product or an environment which is likely to cause an injury, warns users to be careful, and then blames any user when a mishap happen with the product?
Gallup Poll (contd.)

- What do firearms, automobiles, toys, and pens have in common?
- How many of us always use our seatbelt when we ride in a car?
- How many of us tell our kids to always wear a bike helmet?
Did You Know?

- Between 15-50% of US households keep at least one gun in the home?

- A gun kept in the home is used to kill a family member 67% of the time compared to being used to kill a stranger 33% of the time?
Definition of Epidemiology

- **Classic**: Study of the distribution and determinants of disease frequency in human population.

- **Last’s**: Study of the distribution and determinants of health-related states or events in specified populations, and the application of this study to control the health problems.
Elements of Epidemiology

- Distribution of the problem.
- Frequency of the problem.
- Determinants of the problem.
- Control measures for problem.
Distribution of a (Public) Health Problem

- **Who** is affected by the problem?
- **Where** does problem occur?
- **What** is the nature of the problem?
- **Why** does the problem occur?
- **When** does the problem occur?
- **How** can we prevent the problem?
Frequency of a Problem

- **Incidence** or number of new cases of the problem.

- **Prevalence** or number of existing cases of the problem.
Determinants of a Problem

- **Risk** factors.
- **Contributory** factors.
- **Course** of the problem.
- **Prognosis** of the problem.
Control of a Problem

- **Prevention**
  - Primary prevention
  - Secondary prevention
  - Tertiary prevention

- **Acute care**

- **Rehabilitation**

- **Promotion**
Violence

- Threatened or actual use of physical force against a person or a group of persons that is likely to result in or actually results in injury or death.
Types of Violence

- Homicides, suicides
- Domestic violence, child abuse, elder abuse, rape
- Arson, robbery
- Wars, landmines
- Culture-motivated violence
Levels of Violence

- Personal or self-inflicted
  - Suicide, para-suicide

- Interpersonal
  - Homicide, assault

- Group violence
  - Political violence, gang violence
Weapons of Violence

- Firearms & storage practices
  - Handguns (*including* pistols, revolvers)
  - Shotguns
  - Rifles

- Instruments
  - Cutting, piercing
  - “Baseball bat”

- Other, e.g. fist
Defining Characteristics of Violence

- **Motive** (e.g. robbery, retaliation)
- **Enabling** factors (e.g. TV, laws)
- **Precipitating** factors (e.g. alcohol, drugs)
- **Mechanism**/weapon (e.g. fist, gun)
- **Assailant** typology (e.g. age, gender)
- **Victim** typology (e.g. age, gender)
Data Sources - Violence Studies

- National
  - National Crime Victimization Survey
  - Uniform Crime Reports

- Regional/statewide
  - Hospital Discharge Data
  - Behavioral Risk Factor Surveillance System

- Special Reports
  - Child abuse reports
  - 911 calls
Household Ownership Rates
Any Firearm (%) for NORTHEAST STATES 1991-1995

RI
PA
NY
NJ
DE
CT

0 10 20 30 40 50
Household Ownership Rates

Any Firearm (%) for MIDWEST STATES 1991-1995

- WI
- MI
- KS
- IN

0 10 20 30 40 50
Household Ownership Rates

Any Firearm (%) for SOUTH STATES 1991-1995

- WV
- OK
- MS
- LA
- KY

46 48 50 52 54 56
Household Ownership Rates

Any Firearm (%) for WEST STATES 1991-1995

WA 50
NM 44
ID 58
CO 40
CA 30
AZ 35
1994 PA Households

- 37% own at least one firearm
- 23% own a single firearm
  - 40% handguns
  - 20% shotguns
  - 40% rifles
- 76% own one or more
  - 57% included a handgun

Source: Forjuoh et al. (1996)
Barriers to Firearm Use

Firearm Storage Practices

- Taken apart
- Trigger lock applied
- Kept in an unlocked place
- Unloaded
- No other ammunition
- Locked ammunition

Source: Forjuoh et al. (1996)
1994 PA Households

Firearm storage practices

- 20% used 4 barriers of storage
- 28% used 3 barriers of storage
- 25% used 2 barriers of storage
- 22% used 1 barrier of storage
- 6% used 0 barrier of storage

Source: Forjuoh et al. (1996)
International Comparisons

Commenting on the Japanese figures, Dr. Yamanaka writes: “... about firearm statistics ... I have never thought about [this]. In Japan, firearms are strictly controlled, I believe ... I am 48 years old but have never touched a gun ... I only see firearms on the waist of a policeman.”

International Comparisons
Annual Death Rates by Firearms per 100,000 population

- U.S.
- Switzerland
- Canada
- U.K.
- Japan
Culture of Violence in the U.S.

- Children & teens have become **witnesses** of violence.
- Children & teens have become **victims** of violence.
- Children & teens have become **perpetrators** of violence.
U.S. Teen Violence Epidemic

School shootings have become all too common:

- Littleton, Colorado
- Springfield, Oregon
- Jonesboro, Arkansas
- Fayetteville, Tennessee
- Conyers, Georgia
- Pearl, Mississippi
Injuries are no Accidents

- Injuries occur to high risk groups.
- Injuries occur in high risk places.
- Injuries occur with high risk products.
- Occurrence of injuries is as predictable as that of any disease.
Public Health Approach

- **Define** the problem.
- **Identify** causes and associated risks.
- **Design** interventions.
- **Implement** and **evaluate** interventions.
Strategies for Prevention

- **Education** - storage practices
- **Engineering** - gun lock and design issues
- **Enforcement** - background check
- **Economic incentive/equity** - gun back programs
- **Empowerment** - community (COPS)
- **Evaluation** - what works and how?
Primary Prevention of Violence

- Parenting skills training.
- Resolution of conflict training.
- Education of discipline techniques.
- Violence witnessing counseling.
- Education on substance abuse.
- No firearms in the home.
- Television viewing monitoring.
Interventions to Reduce Firearm Violence

- Firearm use
- Firearm users
- Firearm lethality
- Number of firearms

Firearm Use

- Restriction of gun-carrying in public places.
- Firearm detectors.
- Increased punishment for felony gun users.
- Owner liability for harm to others.
- Public education on proper storage and use of guns in self-defense.

Firearm Users

- Licensing of owners.
- Waiting periods (Brady Law).
- Restriction of sales to those at high risk.
- Disruption of illegal markets.
- Technology to “individualize” firearms.

Firearm Lethality

- **Firearm design:**
  - Barrel length
  - Magazine size (“assault” weapons).
- **Ban on dangerous ammunition.**

*Source: Powell et al (1996)*
Number of Firearms

- Restrictive licensing.
- Increased taxes.
- Restriction of imports and domestic manufacture.

How Can Nurses Help?

- Ensure safe communities & schools.
- Recognize problem kids.
- Support anti-violence programs.
- Improved documentation.
- Improved surveillance in the E.D.
- Research.
- Lobby for appropriate legislation.
Recognizing a Problem Kid

- Vandalizing - e.g. intentional damage
- Venting - e.g. angry outburst
- Victimizing - e.g. feeling of victimization
- Viewing - e.g. witness abuse of others
- Vocalizing - e.g. threats of harm
- Vying - e.g. weapon carrying

Source: Stegar (2000)
Early Predictors of the Problem Child

- Pre-natal or peri-natal complications
- History of head injury
- Low I.Q.
- Behavior problems
- ADHD
- Learning disability
What Else Can You Do?

- Limit teen access to violent movies, TV shows, & video programs
- Spend quality time with teens
- Teach teens morals & ethical behavior
- Be a role model for teens
- Adopt a problem child as a potential Scott & White Ranger
The Firearm Problem
Misconception

- Not a racial or ethnic problem!
- Not an inner-city problem!
- No relation with economically disadvantaged kids with bleak futures!
Recent Assailant Profile

Perpetrators of recent school shootings

- Mostly middle-class
- Two-parent homes
- Intelligent kids who do well in school
- Kids without long histories of discipline or substance abuse problems
- The last kids you would expect to shoot someone
Does Prevention Work?

- **Prevention** is better than cure!
- **Prevention** makes a lot of sense!
- **Prevention** is cheaper!
- **Prevention** works!
- **Prevention** has worked for others!
Thank You for Your Attention