

The National Index of Violence and Harm
— a project of the Manchester College Peace Studies Institute —
2003 Index released on November 12, 2005

1. Introduction

The *National Index of Violence and Harm* (NIVAH) is constructed to measure levels of violence and harm to individuals in the United States in a given year compared to levels observed in 1995. The Index indicates changes from year to year; it does not attempt to determine an absolute level of violence in any given year. Two different indices are included: personal and societal. The value for each index is relative to the baseline year 1995, which is indexed at 100%. The personal index includes measures of both interpersonal and intrapersonal violence and harm, while the societal index includes institutional and structural measures. The personal scale consists of seven individual variables, and the societal scale consists of twelve, for a total of 19 individual variables. Some of these variables are made up of several indicators; for example, “Deaths from Substance Abuse” includes measures related to smoking, alcohol, and other drugs.

2. Conceptual Background

We are using a concept of violence as defined by some academics which encompasses various types and components such as interpersonal, structural, institutional, physical, and psychological. However, we limit the definition to harm inflicted upon humans; for example, we do not include harm to the environment except as it might affect humans (such as air pollution). Using the definition by Iadacola and Shupe (1998), violence is an action or structural arrangement that results in physical or non-physical harm to one or more persons. Such actions or hierarchies need to be purposely done, perpetuated, or condoned (e.g., accidents causing harm are excluded). However, violence occurs whether harm is intended or not, whether the action is justified or not, can be psychological, and need not be recognized by the perpetrator or the receiver of the harm.

We have divided violence into two scales, personal and societal, with each of these having two parts. Personal violence includes both interpersonal (Variables 1–5: homicide, sexual offenses, battery, robbery, and reckless behavior) and intrapersonal (Variables 6 & 7: suicide/self-injury and deaths from substance abuse). Iadacola and Shupe (1998) define personal violence as “violence that occurs between people acting *outside* the role of agent or representative of a social institution.”

Societal violence includes both institutional violence and structural violence. “Institutional violence is violence that occurs by the action of societal institutions and their agents. Institutional violence is violence by individuals whose actions are governed by the roles that they are playing in an institutional context,” according to Iadacola and Shupe (1998). Variables 8 & 9 (harm caused by correctional systems and law enforcement) represent violence by the institution of the government. Variables 10 & 11 (including air pollution, injuries from products, and occupational

injuries and fatalities) are measures of violence by corporations. Variables 12 & 13 (domestic violence and child abuse/neglect) are acts of violence that occur within the institution of the family.

The second part of societal violence is structural violence, measured by Variables 14–19, all of which represent violence that comes about because of the structure or hierarchies of United States society. Iadacola and Shupe's (1998) definition of structural violence is "violence that occurs in the context of establishing, maintaining, extending, reducing or as a consequence of the hierarchical ordering of categories of people in a society." Social negligence represents basic human needs which are left unaddressed by society at large. We have defined "basic" needs to include food, housing, health care and education, and have incorporated related measures of unmet need. Infant mortality and life expectancy, while not direct indicators of structural violence, provide general indicators of the quality of life and health care that is provided through the overall organization of society. Hate crimes occur due to prejudice and enmity between various social and ethnic groups. Employment discrimination is a measure of active bias on the part of those with economic/decision-making power against groups with lesser power. Poverty disparity measures imbalances in the poverty levels between different sub-populations such as racial, age, and gender groups. Gang membership is used as a marker for those who are deprived of basic family and community resources (or are otherwise disenfranchised from the mainstream culture) and are thus less likely to benefit from societal improvements in education, employment, health care, economics, etc.

3. Index Development

Principally using references by Iadacola and Shupe (1998 *Violence: Inequality and Human Freedom*) and by Chasin (1997 *Inequality and Violence in the United States*), we worked toward conceptualizing overall categories and possible individual variables to include within each. A large list of potential variables and indicators (suicide, domestic violence, etc.) was constructed, within the categories of interpersonal, intrapersonal, institutional, and structural violence. Various professionals, mainly in the social sciences and some with a particular interest in or expertise in violence, were solicited for feedback, principally by use of relevant list-servs. They were asked to rate each variable on whether it should be included in the scale. Suggestions for additional variables/indicators were also solicited and a search was then conducted for valid, yearly, and national measures for those variables which were highly rated or otherwise seemed interesting to pursue (e.g., a good measure was sought to show harmful/insufficient aspects of our health system; lack of health insurance was chosen). Input was also obtained from experts in specific areas during this process of selecting measures (for example, health professionals or those involved with corporate accountability projects). From this, the process moved to another round of discussions among our research team, obtaining additional feedback, and more refining.

4. Methodology

Some variables are a combination of several indicators (e.g., deaths from substance abuse includes figures relevant to deaths due to alcohol, tobacco, and drug abuse). There are also occasional double countings of some figures in the overall scale (e.g., sexual violence is counted in the personal violence scale, but some sexual violence occurs as domestic violence, which is also counted as institutional family violence). This happens when the action can be considered in two different ways.

Additionally, we are concerned more with changes from year to year, rather than establishing an absolute level of violence for a particular year. Therefore, even if an occasional variable or indicator might be considered by some to be undermeasured because of lack of full reporting, this is not a concern as long as that under reporting occurs yearly and consistently, which is our assumption. We chose 1995 to be our baseline year as that was the year in which many of our statistical measures first became available.

We have made corrections for population growth. This is to ensure that, for example, the measure for homicides does not increase one year merely because there are more people who might kill or be killed. However, we correct for the overall population size, rather than population changes in specific age groups that might be more prone to particular types of violence.

Finally, as noted, we sought measures that are valid, annual, and national, trying to use direct measures of harm, when available. When this was not possible for conceptual variables we thought important, we used measures that represented markers of particular types of harm if they met the above criteria (yearly, etc.) as long as empirically they were linked to harm in that area of concern. For example, we used the variable of air pollution because of evidence linking it to ill effects on health, and we used abuse/misconduct by law enforcement as a marker of the negative impact of government toward citizens. We excluded some conceptual variables we would have liked to use for want of measures which fit our criteria. We gained feedback from various sources, but, in the end, it was our research group's own call, and we recognize differences of opinion on various aspects of the Index. There can be no perfect, scientific index in an area such as "violence" with different definitional, political/value, and methodological perspectives. For example, we realize that some people will feel that legal abortion should be included in the index and its calculations. Those wishing annual figures for abortion can go to <http://www.cdc.gov/mmwr>, a web page provided by the Centers for Disease Control. Detailed discussion of the variable definitions is provided in *National Index of Violence and Harm: Definitions and Sources* (see Index web site www.manchester.edu/links/ViolenceIndex).

5. Index Calculations

The Personal and Societal Indices were calculated in an *Excel* spreadsheet. Separate sheets provide detailed calculations for each year, 1995 through 2003 (see Index web site). The Personal Index is computed as the arithmetic mean of the indices for Variables 1 through 7, giving each variable equal weight. Individual variable indices are computed as a percentage of the variable's 1995 baseline value. (Thus all index values for 1995 are defined to be 100.) An increasing index indicates greater levels of violence/harm, while a declining index indicates an improvement (i.e., reduction). As mentioned earlier, some variables consist of several indicators (e.g., Variable 7 - Deaths from Substance Abuse). In such cases the variable index is the mean of the indices for the individual indicators. From these procedures the relative weighting of variables and indicators can be inferred. For example, in constructing the Personal Index, Variables 1–6 each contributes one seventh of the index while Indicators 7a–c each contributes one twenty-first (i.e., one third of the remaining seventh).

The Societal Index is calculated in similar fashion, as the mean of the indices for Variables 8–19, with numerous variables consisting of several indicators. Index values have also been computed for the various categories (e.g., Interpersonal, Government); however, these category indices are not used in the actual calculations of the two overall indices.

In the annual detail sheets, the column “Unadjusted” contains the raw data for each variable. Those data that need to be adjusted per the U.S. population (see *National Index of Violence and Harm: Definitions and Sources*) are divided by the population figure (in 100,000s) indicated, with the result appearing in the “Adjusted Data” column. The indexed value (relative to 1995) is computed under “Indicator Index” and subsequently these values are averaged in the columns “Variable Index” and “Overall Index.”

In addition to the annual detail sheets, the *National Index of Violence and Harm: 1995–2003 Summary* displays changes in the variable and overall indices over the entire period of study.

6. Changes from the 2002 Index

Each year some revisions to the Index are made to reflect revised figures from our data sources or changes in variable definition. Values which have been revised are shown in italics on the annual detail sheets and affected variable index values are also italicized on the summary sheet.

U.S. Population

Revised Census Bureau figures for the July 1st populations in 2000 through 2002 have been used. These changes did not impact the patterns previously observed in the 1995–2002 data.

Variables 1, 2a, 3a and 4: Crime Index Variables

The 2002 figures were updated with final values provided in the 2003 *Uniform Crime Report*.

Variables 6, 7abc, 9a, 15ab: Centers for Disease Control Health Data

As the final 2003 data had not been released at publication time we used preliminary CDC data adjusted by conversions factors based on historical data (1996–2002). In 2002, the final data had been used so no revisions were required.

Variable 9b: Abuse/Misconduct

The 2001 figure was revised per updated information from the data source. Although this did have a noticeable affect on the overall Societal Index (changing, for example, the 2001 value from 100.4 to 101.0) it does not affect overall conclusions regarding index trends.

Variable 10: Air Pollution

Variable 10c (Pollution Emitted) is based on preliminary EPA data as the final data had not been released at time of publication.

Variable 11c: Occupational Fatalities

The final 2002 figure provided by Bureau of Labor Statistics has been incorporated. Previous findings were not affected by this change.

Variables 14b & d: Hunger and Homelessness

After reviewing the source data slight refinements were made to the 2002 release. This did not affect previous our conclusions regarding Social Negligence or the overall Societal Index.

Variable 15b: Life Expectancy

Life expectancy is the only positive variable in the Index (i.e., an increase in value indicates an improvement). In past releases we converted it to a negative variable (where an increase indicates greater harm) by subtracting the raw value from 100 years. This was a somewhat arbitrary estimate of maximum obtainable life expectancy. In this year's release we have changed the conversion to be the reciprocal of the raw value. This is consistent with how several other composite indices deal with this issue (e.g., the *Index of Leading Economic Indicators*). Using this method, the 2002 indexed value for life expectancy increased from 93.8 to 98.1 (and to a lesser degree the Structural category and the Personal Index also increased, both of which continue to show no clear trend). However it does not change the overall downward trends previously observed for the Life Expectancy indicator or for Variable 15 "Infant Mortality/Life Expectancy."

Variable 18: Poverty Disparity

Small changes have been incorporated in prior years' data reflecting the 2003 Census Bureau report. Previous findings were not affected by these changes.

7. Overall 2003 Findings

Overall there has been improvement in fourteen of the nineteen variables measured over the period studied (1995-2003), with twelve of these positive trends being statistically significant. Furthermore, 13 of the 19 improved from 2002 to 2003. One notable exception is in how we treat the most vulnerable, as seen in rising hunger, homelessness, and lack of health insurance. Street crime, called "interpersonal violence" in the index, has declined sharply over the years, with all five variables showing improvement. The two "intrapersonal" variables, however, have diverged, with a downward trend for "suicide/self-injury," and an increase in deaths from substance abuse, fueled almost entirely by a sharp increase from illicit drugs. Altogether, these changes resulted in an overall drop in the Personal Index of 14% since 1995, a strong statistically significant trend. For Societal violence and harm, the drop was not as sharp, but was still fairly consistent across measures. Within Societal violence/harm, only the Government category (correctional system and law enforcement) increased, while a drop was seen in the Corporate, Family, and Structural categories.

Indices at all levels (overall, category, variable and indicator) were analyzed for consistent trends over the eight-year study period. The column "Corr." in the *1995-2003 Summary* (see Index web site) provides Spearman's rank correlation for each index versus time (i.e., year). As indices do not represent data sampled from a given population, use of Spearman's rank correlation (r_s), while somewhat less powerful than Pearson's correlation, is more theoretically sound. The column "Sig." indicates whether the trend over time, as represented by the correlation, is considered statistically significant at the .05 (*) and .01 (**) levels. Statistical significances were determined using two-tailed probability values, as provided by *SPSS, Version 13.0*. In this context statistical significance indicates that the index values are ordered over time (either in an increasing or decreasing fashion) to a degree that is unlikely to occur solely due to chance (i.e., in the presence of only random fluctuations in the data). That is, the probability of randomly observing data with such a clear upward or downward trend is less five percent (or one percent).

As observed in the 2002 release, many variables/indicators show statistically significant trends. We emphasize that a "significant trend" does not necessarily imply a significant *difference* between the 1995 and 2003 values. For example, while life expectancy (Variable 15b) only improved 2.3% from 1995 to 2003, as the change was fairly consistent over time the *trend* is considered significant. On the other hand, abuse/misconduct by law enforcement (Variable 9b) increased 11.7% during the study period but, due to its erratic movements, the variable does not display a statistically significant trend.

A number of interesting observations are made from this analysis. The Personal Index experienced an overall 14.3% decline in violence from 1995 to 2003. After two successive years of slight increases a small decrease was again observed for 2003 (from 86.5 to 85.7), continuing to show a significant downward trend since 1995 (with Spearman's rank correlation of $r_s = -0.828$). Six of the seven personal violence variables show significant downward trends over time. (The exception is Deaths from Substance Abuse which shows a significant positive trend.) Furthermore five of these seven saw actual decreases in 2003 (the exception being homicides and substance abuse). We also note that the interpersonal category has a downward trend deemed significant (with rank correlation of -1.000). This "perfect" correlation indicates that, in total, Interpersonal violence has decreased each year since 1995. However harm done to oneself (Intrapersonal), which had been generally decreasing from 1995 through 2000, has now increased for three consecutive years. This is primarily due to a large increase in deaths due to illicit drugs, having gone up 44% from 2000 to 2003.

In contrast to the long-term decreases in personal violence the overall Societal Index had remained fairly stable from 1995 to 2001, with the indexed value ranging from 97.4 to 101.0. However, this index has now dropped in two consecutive years from 101.2 (in 2001) to the current 95.0. Closer examination of the data suggests two reasons. First, three of the four societal categories (government, corporate, and family) decreased in both 2002 and 2003. However a large part of the overall decrease can be attributed to just two variables: Law Enforcement Abuse/Misconduct (Variable 9a) and Hate Crimes (Variable 16). Charges brought against law enforcement dropped from 103 to 61 in 2003. It should be noted in 2001 hate crimes increased dramatically in the wake of the September 11th attacks, rocketing up from an indexed value of 89.5 to 107.2 (with 12,020 victims in 2001 compared to just 9,924 in 2000). However, in both 2002 and 2003 hate crimes dropped to new lows (for this study) with 9,222 victims in 2002 and 9,100 in 2003. In fact, if 2001 were omitted we would continue to see a very consistent reduction in hate crimes from 1995 through 2003. However, due to the anomaly of 2001 this downward trend in hate crimes is not deemed statistically significant.

While poverty disparity overall had decreased consistently since 1995 it leveled off in 2002 and increased in 2003, although still showing an overall significant downward trend. Class disparity continues to climb while the decrease in racial disparity may have bottomed out with two consecutive years of increase. Furthermore, in 2003 one was 166% more likely to be in poverty if Black, Hispanic or Asian (versus non-Hispanic White), 22% more likely if female (versus male), and 65% more likely if under 18 years of age (versus 18 or over). The 2003 detail sheet contains these specific data. The high school drop-out rate which had been fairly stable since 1997 (with an indexed value varying between 79.2 and 87.9) plummeted from 87.4 to 62.0 in 2002; however, it moved back sharply upward to 70.6 in 2003. In summary, we observe that, except for a small spike in 2001, the Societal Index has been decreasing consistently since 1997. Furthermore, eight of the twelve variables comprising this index decreased in from 2002 to 2003.

8. Detailed Findings

There were two indicators which were deemed in 2003 to display statistically significant downward trends (since 1995) which had not appeared in previous findings. These were Drop-Out Rate and Poverty Disparity by Gender, each now showing a significant negative correlation at the .05 level. On the other hand, Deaths from Smoking decreased to its lowest level in 1997 negating a previously observed significant positive trend (i.e., its P-value moved back above the .05 level).

There were several categories or variables which had exhibited a downward trend from 1995 through 2002, but increased in 2003, though not enough to invalidate the statistical significance of the overall trend. These were:

- Homicide
- Occupational Fatalities
- Child Abuse/Neglect
- Dropout Rate
- Poverty Disparity by Race
- Poverty Disparity by Age

Conversely, Nonviolent Incarceration decreased in 2003, but maintained its overall statistically significant upward trend. It is also interesting to observe that a number of variables and categories have decreased (or increased) consistently during all years covered in the study, indicated below by a perfect negative (–) or perfect positive (+) correlation.

- Interpersonal (–)
- Pollution Emitted (–)
- Consumers/Employees (–)
- Occupational Injury/Illness (–)
- Homelessness (+)

9. The Index Graphic

A graphic is provided to represent the levels of violence and harm in the United States as measured by the Personal and Societal Indices. The heights of the bars display whether violence is increasing or decreasing from year to year. The graphic comparing years 1995 through 2003 (see Index web site) demonstrates the consistent decrease in the Personal Index through 2001 when it began to inch upward, and the relative stability of the Societal Index until 2002, when a clear decrease began. Time plots of individual variables are available at the Index web site. These graphs are also included with the Index summary.

10. Index Authors

The *National Violence of Index and Harm* was originally authored in 1999-2000 by the following research team:

- Neil Wollman, Ph.D., Senior Fellow, Peace Studies Institute; Professor of Psychology, Manchester College
- Bradley Yoder, Ph.D., Professor of Sociology and Social Work, Manchester College
- James Brumbaugh-Smith, Ph.D., Associate Professor of Mathematics, Manchester College
- Dustin Brown, M.S., Manchester College class of 1999
- Heidi Gross, Manchester College Class of 2002 and former Peace Studies intern
- Benjamin Long, Manchester College class of 2002

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12. Contact Information

For more information, please contact:

Neil Wollman
 njwollman@manchester.edu
 Phone: (260) 982-5346
 Fax: (260) 982-5043

Visit the *National Index of Violence and Harm* web site at:
www.manchester.edu/links/ViolenceIndex

13. References

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