

**UNITED STATES HISTORICAL RAPE TRENDS AND MULTI-COUNTRY
COMPARISON**

by

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ABSTRACT

Background: Rape impacts multiple facets of the victim's life. Despite continued efforts to control this violent offense, rape is still a major public health issue. The objective of this analysis is to aggregate the occurrence of rape in the United States and compare its prevalence with three other nations, Canada, South Africa, and Sweden, to provide a comprehensive insight into how widespread this crime is.

Methods: Data analytics and data mining were conducted on FBI published information spanning from 2001 to 2017 on three rape-related crime indicators. Information from other nations were obtained from the country's respective reporting agencies. The data were then aggregated to provide insights into the past and current U.S. trends and how they compare to other countries.

Results: The findings show that rape is still a critical public health area of concern, not just nationally, but also globally. The findings reveal that since the revision to the FBI's definition of rape, reported rape increased. All nations observed, other than South Africa, demonstrate an increasing trend in their national prevalence of rape.

Conclusions: Whether due to better reporting or increased frequency of rape occurring, rape offenses are on the rise. This is important to note because of the widespread and long-lasting impacts rape can have on victims. Governments must be mindful and proactive to counter this

trend. National governments are encouraged to adopt improved educational campaigns targeted towards at-risk groups (perpetrators and victims), robust reporting standardization from criminal justice agencies, and better support services for victims.

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PREFACE

I want to first thank my mom for her endless support throughout my life and during graduate school. I want to also thank Dr. Jalenski for her guidance and dedication to help me throughout these many long months. Lastly, I want to thank Dr. Terry for her generosity and insights that helped focus my analysis.

1.0 INTRODUCTION

Rape is a serious public health concern because not only is it classified as a violent crime, which carries legal ramifications, but it also has the potential for long-term psychological, physical, and economic impacts on the victim. Rape is not just a concern in the United States (U.S.) but is also a global health issue. The World Health Organization (WHO) classifies rape as a violent crime, and the international community condemns the act (WHO, 2002). While there is no single universal definition of rape, the WHO (2002) defines rape as “physically forced or otherwise coerced penetration – even if slight – of the vulva or anus, using a penis, other body parts or an object.”

Although the majority of victims are female and the perpetrators are male, it is important to highlight that men can be victimized and no country is protected against this crime (WHO, 2002). It is important to note that rape can occur within a marriage or dating relationships, by a stranger or known individuals to the victim, by a single individual or by a group, and can happen to women and men (WHO, 2002). In the United States, legislation related to rape varies from state to state and no federal legislation standardizes the definition nor the punishment for this crime. However, the Federal Bureau of Investigation (FBI) uses its own definition when classifying rape crimes. The current FBI definition is “penetration, no matter how slight, of the vagina or anus with any body part or object, or oral penetration by a sex organ of another person, without the consent of the victim” (FBI, 2013).

1.2 SCOPE OF THE ISSUE

The National Center for Injury and Prevention, under the Centers for Disease Control and Prevention (CDC), estimates that one in five women and one in 71 men in the United States will be victims of rape at some point in their life (Black et al., 2010), with 94% of victims of completed rape being female and 6% being male (Rennison, 2002). This equals an estimated 23 million U.S. women and two million men who have been raped (Peterson, DeGue, Florence, and Lokey, 2017). While women are frequently the victims of rape, male rape is likely to be widely underreported within the United States and in many other nations (National Sexual Violence Resource Center, 2018).

Most international figures on male rape must be taken with caution as the actual rates are likely much higher than the reported rates (WHO, 2002). According to the National Sexual Violence Resource Center (NSVRC), rape in general against both women and men is one of the most underreported crimes in the United States (2018). To elaborate, of those who are raped, only 20% of victims report the offense (Walfield, 2015). Oftentimes, over 50% of female rape survivors fail to acknowledge they have been raped (Wilson and Miller, 2015) and over 90% of college-campus sexual assault victims do not to report their assault (NSVRC, 2018). In addition to low reporting, the United States has had historical issues related to the handling of rape and sexual assault cases. Alderden and Ullman's (2012) analysis of the handling of sexual assault cases by police in a Midwestern precinct revealed that roughly 35% of reported sexual assault cases resulted in arrest. Of those that resulted in arrests, only 39.1% received charges. However, examining all the cases together reveals the actual prosecution rate was just 9.7% of all reported cases (Alderden, and Ullman, 2012). In summary, the vast majority of offenses go unreported

and of those that are reported, a small percentage result in arrests, an even smaller subset is prosecuted, and only a minority receive felony charges.

Due to the prevalence and potential impacts of rape on the population, and to the nation as a whole, the U.S. Department of Justice's Office on Violence Against Women created a national protocol for how criminal prosecutors and health care practitioners should respond to a victim of sexual violence. Their rationale is that "coordinated community efforts are the best way to stop violence against women, hold offenders accountable for their crimes, and promote victim healing and recovery" (Office on Violence Against Women, 2013).

1.3 OBJECTIVE

The objective of this analysis is to create an overview of the prevalence of rape and sexual assault in the United States by examining reported and estimated data published by the FBI. This is to investigate how the United States' criminal justice system records and processes rape-related cases and how its national trends compare against other nations. To give perspective, the aggregated figures will be compared to three other nations, Canada, South Africa, and Sweden. The multi-country analysis will provide insights into the historical prevalence rates of these four countries and shed light on how widespread this crime is.

2.0 IMPACT OF RAPE

The WHO classifies rape as a violent crime and the United Nations (UN) recognizes rape as a violation of an individual's human rights (WHO, 2017). Because many victims of rape are women, the UN and the WHO dedicate a number of resources to addressing the impact of rape and global prevalence of violence against women (Moreno and Watts, 2011). Addressing violence against women is critical for achieving Millennium Development Goal (MDG) 3, which strives to promote gender equality and empower women (Moreno and Watts, 2011). While efforts have been made to curtail the violence against women, the WHO estimates that over 35% of women globally have experienced physical and/or sexual violence in their lifetime by an intimate partner or non-partner (WHO, 2017) (see Appendix A). Factors that increase a women's vulnerability include being young, consuming drugs or alcohol, poverty, lower levels of education, beliefs in male sexual entitlement, and weak legal sanctions against perpetrators (WHO, 2017).

Sexual violence includes, but is not limited to, rape, unwanted sexual advances, sexual abuse, forced marriages, intentional denial of contraception, forced abortions, female genital mutilation, forced prostitution, and sexual exploitation (WHO, 2002). Globally, intimate partner violence (IPV) and sexual violence are oftentimes perpetrated by men against women (WHO, 2017). The impact of experiencing sexual violence can have short-term and long-term mental, physical, sexual, and reproductive health outcomes on the victim (WHO, 2017). Rape and sexual assaults, both forms of sexual violence, are traumatizing and women who experience IPV are more likely to abuse alcohol, suffer from depression, and are at greater risk for acquiring HIV and other sexually transmitted infections (STIs) (Moreno and Watts, 2011). In addition, violence against women adversely impacts economic development (Moreno and Watts, 2011). To

demonstrate, total costs of IPV to the United Kingdom was £23 billion in 2004, €2.5 billion (France) and \$1.8 billion (Bangladesh) in 2010, and approximately \$5.8 billion in 2003 to the U.S. economy (Duvvury, Callan, Carney, and Raghavendra, 2013).

Focusing on the United States, the FBI first defined rape in 1933; however, the agency revised its legacy definition in 2013 to remove the inclusion of force against a female in the definition and to expand the scope of reportable cases (FBI, 2013). Peterson, DeGue, Florence, and Lokey (2017) conducted a study to evaluate the personal economic costs to rape victims in their analysis. The authors found that the lifetime cost of rape for an adult victim amounts to \$122,461, with a combined \$3.1 trillion cost for all victims. On a national scale, rape and sexual assault dramatically impact the nation's economy; the combined tangible (\$41,252) and intangible (\$199,642) costs of rape and sexual assault equal to \$240,776 per offence to the United States (McCollister, French, and Fang, 2010). When scaled to the total estimated number of rape offenses committed in 2007, which was 92,160, the cost of rape totaled over \$22 billion¹. Since 2007, the total cost of rape increased over 155% from 2007, amounting to over \$56 billion. Rape is a serious burden on the economy because it not only financially impacts the nation's economy, but also personally to the victims.

Rape also directly affects the victim's emotional and psychological health. Rape is a traumatic event for a victim to experience and many individuals suffer short-term and long-term negative mental health outcomes post-assault (Jordan, Campbell, and Follingstad, 2010). Outcomes for women who have a lifetime history of sexual assault range from 17% – 65% of women developing posttraumatic stress disorder (PTSD), 13% – 51% will develop depression, 73% – 82% develop fear and anxiety, and 28% – 61% may use illicit substances (Campbell, Dworkin, and Cabral, 2009). More alarmingly, between 23% – 44% of victims of sexual

¹ The calculation is likely much larger since this figure does not factor the costs from sex offenses.

violence have thoughts about suicide, and up to 19% of victims will attempt suicide (Jordan, Campbell, and Follingstad, 2010). While most acute psychological distress subsides after the first few months, symptoms of psychological trauma can last up to two years. Interestingly symptoms of psychological distress post-assault do not vary by race or ethnicity (Jordan, Campbell, and Follingstad, 2010).

Along with the mental health concerns, victims are at a greater risk of using substances to cope; 13%-49% of victims will become dependent on alcohol and 28%-61% may use illicit substances (Jordan, Campbell, and Follingstad, 2010). To elaborate, substance use is a serious concern because there appears to be a correlation between use of anxiolytics/sedatives, which include Xanax®, Valium®, and Ambien®, and experiences with negative sexual events, which include sexual aggression (e.g. rape) among college-aged students (Parks, Frone, Muraven, and Boyd, 2017). In a study among college students, researchers found that beyond the impacts of substance use, sexual violence carries additional physical health consequences. Victims' hypothalamic-pituitary-adrenal (HPA) axis post-assault has shown dysregulation, which causes lower cortisol levels and inflammatory responses, and victims are at risk for developing chronic inflammatory disorders, chronic pain, and other somatic symptoms (Zinzow, et al., 2011).

It is important to discuss the population of college students, particularly female students, because they are at a greater risk of being victimized than the general population (Cullen, Fisher, Turner, 2000). In addition, the highest at-risk populations for sexual violence are groups ranging from 18 to 34 years of age, which include a large proportion of college-aged women (Zinzow, et al., 2011). Jordan, Combs, and Smith's (2014) analysis found that women who experienced rape had lower GPAs than women who experienced other forms of sexual assault. Women who had been raped were found to have lower GPAs both at the end of the semester it occurred and the

following semester, thereby indicating the impact of rape on academic performance (Jordan, Combs, and Smith, 2014).

Understanding the negative financial, psychological, physical, and academic effects on victims of rape is important because it sheds light on the extensive reach rape has on victims and to the nation. The United States, as well as the WHO, recognize the severity of the crime and have identified it as a critical public health issue. Because violence against women is experienced globally, it is important to understand how the United States' prevalence of rape compares to those of other nations. Rates in the nations of Canada, South Africa, and Sweden will be examined and compared to one another to the United States, which will shed light on each nation's historical prevalence rates.

2.1 SELECTION OF COUNTRIES TO CROSS COMPARE

Canada, Sweden, and South Africa were selected for this analysis because they either have geographic similarities to the United States or have different cultures and continental histories to the U.S.

The Organization for Economic and Co-operation Development (OECD) reports data on two measures related to a nation's attitude towards violence against women, which is the percentage of women who agree that a partner is justified in beating their wife under certain circumstances, and secondly, the percentage of women who have experienced physical and/or sexual violence from a partner sometime in their life (OECD, 2019) (see Appendix B).

According to the OECD (see Figure 1), Canada has the lowest rates for attitudes towards violence and lifetime prevalence. South Africa has the highest percentage of women who agree that a husband beating his wife is acceptable under certain circumstance. On the other hand, the

United States has the highest prevalence of women who have experienced sexual and/or physical violence from a partner in their lifetime. It is interesting to note that South Africa and the United States have opposite trends in attitudes towards violence and in lifetime prevalence of experiencing violence. The analysis will look to see if Canada’s low rates translate to lower prevalence of rape. In addition, it will examine data for Sweden and United States, countries that share low percentage of attitudes towards violence but higher percentage for lifetime prevalence of violence, and compare their outcomes. Lastly, the analysis will investigate how South Africa’s high rates in attitudes towards violence, but low lifetime prevalence figure impacts the nation’s prevalence of rape.

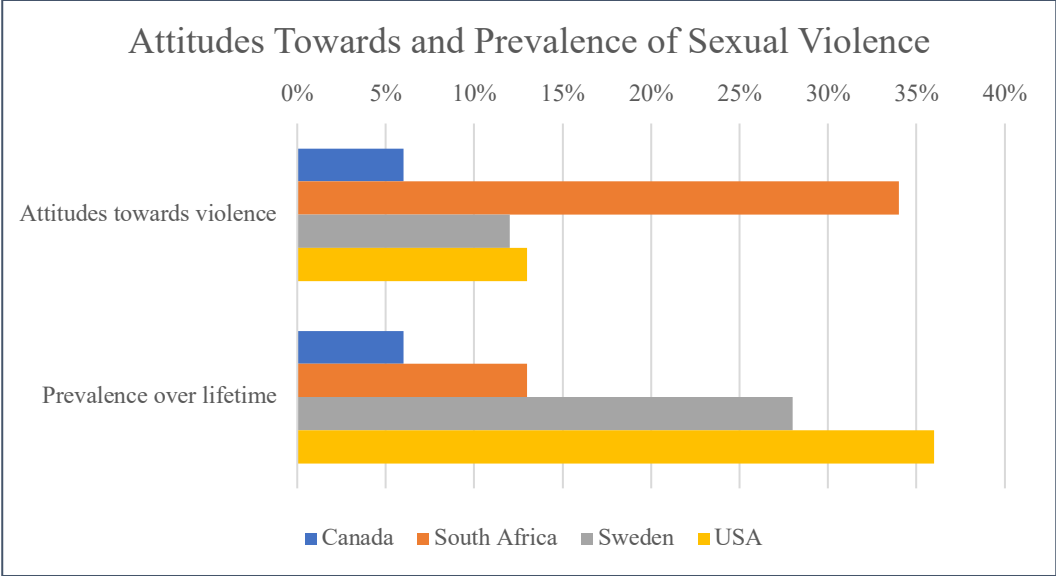


Figure 1: Attitudes Towards and Prevalence of Sexual Violence in Canada, Sweden, South Africa, and United States

Source: OECD (2019)

3.0 METHODS

In order to generate an aggregated statistic on the prevalence of rape and sexual assault in the United States, FBI published arrest data and estimated prevalence data from 2001 – 2017 were used. National data for Canada, South Africa, and Sweden were accessed from each nation's respective crime statistics and reporting agencies from 2011 – 2017.

3.1 FBI DATA

Since 1929, the FBI's Uniform Crime Reporting (UCR) Program has been collecting crime information in the United States. Every year, the FBI's Criminal Justice Information Services Division releases an annual report, called *Crime in the United States*, under its UCR Program. Three indicators were used for this analysis: (1) total estimated rape offenses, (2) total arrests related to sexual violence, and (3) total reported rape offenses (see Table 1 for more information). The total estimated rape offenses is a measure of the aggregated number of rape offense in the U.S. and accounts for unreported and improperly reported rape offenses. The total arrests related to sexual violence figure is the aggregated count of recorded arrests made by law enforcement agencies for rape and sex offenses. Lastly, the total reported rape offenses measure is the aggregated information submitted to the FBI by each state's local and state law enforcement agencies. To summarize, the total estimated rape offenses indicator attempts to fill in state-provided information gaps, since not all law enforcement agencies report their findings to the FBI (see Appendix C) and states have varying compliance percentages. These indicators were selected because they provide valuable insights into the nation's state and national trends.

3.2 FBI DEFINITIONS

It is important to note that while each U.S. state has its own legislation that defines rape and sexual assault, the FBI has developed its own standardized definition. As already noted, the FBI revised its legacy definition for rape in 2013. From 1933 – 2012, the FBI’s legacy definition of rape, under the term forcible rape, was “the carnal knowledge of a female forcibly and against her will” (FBI, 2013). The revised definition of rape removed the word forcible and defines rape as “penetration, no matter how slight, of the vagina or anus with any body part or object, or oral penetration by a sex organ of another person, without the consent of the victim” (FBI, 2013). After 2016, the FBI no longer factors in crimes reported under the legacy definition into its final total reported rape offenses figure. Since 2017, the total reported rape offenses measure is instead counted using only crimes classified under the revised definition by law enforcement agencies.

3.3 INTERNATIONAL DATA

Data for Canada were gathered from Statistics Canada, the national agency responsible for collecting and maintaining reports for Canada. Data for South Africa were collected from the country’s South African Police Service (SAPS), which is the nation’s department of police. Lastly, information was accessed from the Sweden’s Official Statistics (SOS) office, responsible for managing and publishing reports on the nation’s information (see Appendix D).

3.4 SORTING THE DATA

Historical data for total estimated rape offenses date back to 1994 and historical data for total arrests related to sexual violence measure went back to 1995. However, because historical data for the total reported rape offenses indicator was limited to 2001, the analysis for the United

States had a 2001 – 2017 timeline, 17 years of data. Reports from the FBI were collected biennially, starting with 2001 and ending with 2017. As a result, there are nine points of data for each indicator that informs the historical trends and patterns. Because the scope of this study focused on U.S. states that have recognized voting rights in Congress, Washington D.C. and the U.S. territories were not included in the analysis.

Data for Canada’s prevalence rate went back to 2010 while data for Sweden and South Africa dated back to 2008. Following in the fashion of the data collection method used for the United States’ analysis, which collected information from years ending in an odd-number, the multi-country comparison therefore started from 2011 and ended in 2017, seven years of data.

3.5 SOURCES

A number of sources were accessed from the FBI as well as from the reporting agencies from Canada, South Africa, and Sweden (see Table 1 below for expanded source information).

Table 1: Indicators and Data Sources

Indicator	Data Source	Time Period
Total estimated rape offenses	FBI, Crime in the United States – Table 1	2001-2017 (biennially)
Total arrests related to sexual violence	FBI, Crime in the United States – Table 69	2001-2017 (biennially)
Total reported rape offenses	FBI, Crime in the United States – Table 5	2001-2017 (biennially)
Prevalence of rape in Canada	Statistics Canada	2011-2017 (biennially)
Prevalence of rape in South Africa	South African Police Service	2011-2017 (biennially)
Prevalence of rape in Sweden	Sweden’s Official Statistics – Table 10	2011-2017 (biennially)

3.6 TOOLS

Microsoft Excel was primarily used to collect and conduct analysis of the data. Google Translator was also used in the national cross-comparisons to translate data from the country's native language into U.S. English.

4.0 FINDINGS AND RESULTS

Figure 2 depicts the total number of rape offenses using the reported and estimated indicators (see Appendix E for expanded data). On average, the two measures were similar to one another until 2017. Rape offenses were on the decline between 2001 – 2011. During this time, the total estimated rape offenses decreased 7.4% (total estimated indicator) and 7.8% (total reported indicator). However, when the FBI implemented its revised definition of rape in 2013, both indicators increased over 125% from 2011 to 2013. Focusing on 2017, the two indicators diverged because the FBI stopped publishing data under the legacy definition. Thus, data from reporting agencies that classified rape offenses under the legacy definition were excluded in the final count of the total reported rape offenses in 2017. Therefore, total estimated rape offenses is the only reliable measure for evaluating national rape trends in 2017.

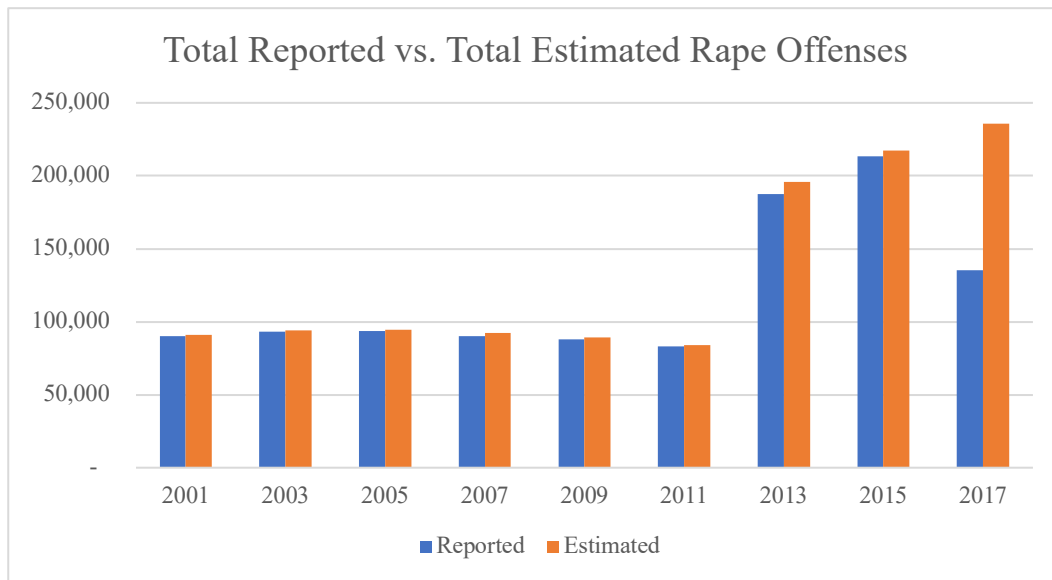


Figure 2. Total Reported Rape Offenses vs. Total Estimated Rape Offenses

Figure 3 illustrates the prevalence of the number of total estimated rape offenses per 100,000 U.S. residents. Due to the reporting disparity in 2017, only the total estimated rape offenses indicator was used to calculate the United States' historical prevalence trends, and was

the value used in the multi-country comparison. Between 2001 – 2011, the prevalence of rape offenses was on the decline and saw a 15.1% drop during those years. However, after the implementation of the revised definition, prevalence grew over 129% from 2011 to 2013. Since 2013, the prevalence of rape has been rising, peaking in 2017 at an estimated 72.3 per 100,000 residents. Because the FBI published data only up to 2017, it is unknown if this upward trend occurred in 2018. However, it is reasonable to assume that this five-year trend carried into 2018, given that reporting agencies throughout the nation continue transitioning to the revised definition.

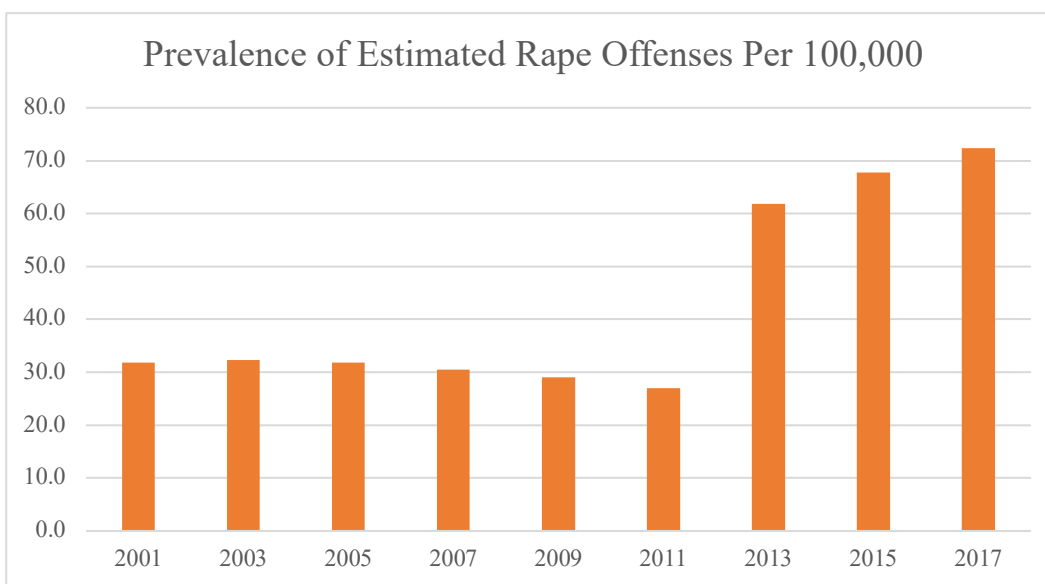


Figure 3. Prevalence of Total Estimated Rape Offenses Per 100,000 Residents

Figure 4 compares the prevalence of the total estimated rape offenses measure against the prevalence of total reported rape offenses in the United States. The figure illustrates the differences in prevalence rates for both indicators. It is valuable to compare both prevalence rates as it informs how the state and the FBI understand the nature of this crime. From 2001 – 2015, the two prevalence rates closely mirrored one another. However, because the FBI no longer reports data under the legacy definition, the prevalence rate for the number of total reported rape offenses in 2017 was 42.5% lower than the prevalence rate for the number of total estimated rape

offenses. Clearly a key challenge for ensuring information integrity is to have uniform reporting standards and guidelines for rape offenses by reporting agencies. Some reporting agencies in the United States continue to classify rape crimes under the legacy definition, despite its revision. Until a majority adopt the revised definition, or the FBI reinstates reporting under the legacy definition, prevalence rates using the reported, and not estimated, measure will continue to inaccurately portray the true national trend.

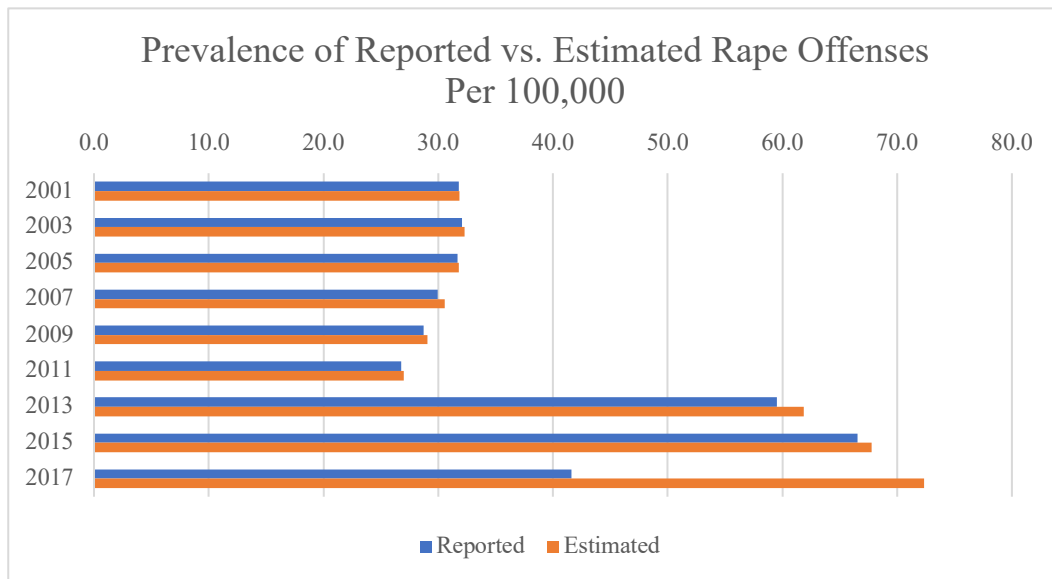


Figure 4. Prevalence of Total Reported Rape Offenses vs. Total Estimated Rape Offenses Per 100,000 Residents

Figure 5 shows the proportion of arrests related to rape offenses out of the total number of arrests made in the United States (see Appendix E for expanded data). In general, arrests made for rape crimes accounted for a small fraction of all arrests for all crimes, of the 8.9 million arrests made in 2017, rape-related arrests was <0.25% of the total. On average, the arrest rate for rape offenses has remained relatively stable, with figures fluctuating between a 0.8% range; 2009 – 2013 had stable arrest trends, with only 0.15% of the total number of arrests made being related to rape crimes in each of those years. While still relatively low, 2015 saw a 40% jump from the 2013 figures. However, as previously discussed, rape continues to be one of the most

underreported crimes in the United State and globally. The United States’ criminal justice system continues to be criticized for its handling and prosecution of reported cases. Therefore, it is important when evaluating trends in the United States to be mindful of the effect of underreporting and low arrest rate patterns on published national data.

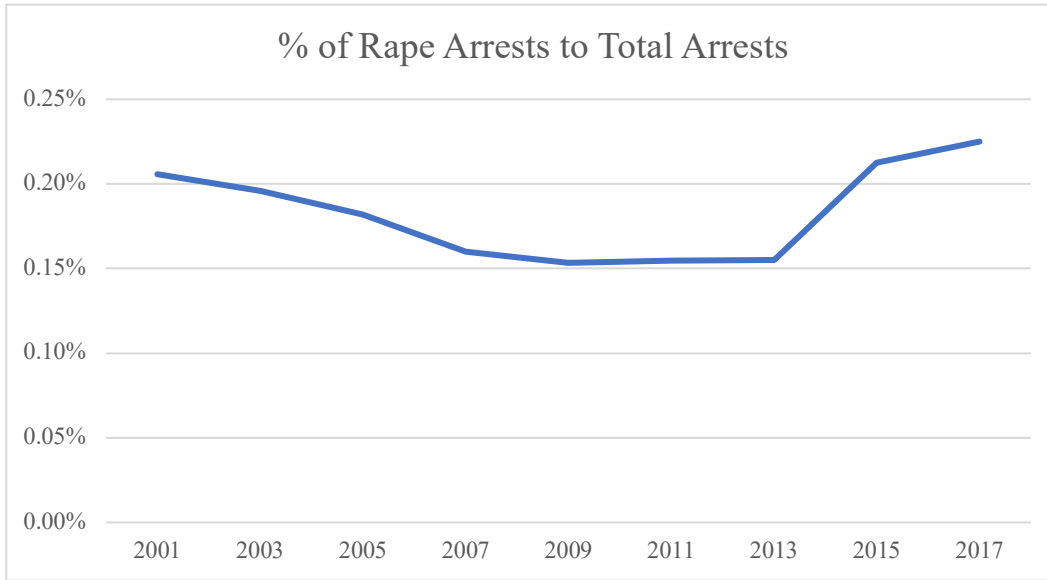


Figure 5. Percentage of Total Arrests Made for Rape Offenses to the Total Number of Arrests for All Crimes Made by Law Enforcements

Figure 6 shows the total number of arrests related to sexual violence, which includes both sex offenses and rape, against the total number of rape arrests made each year. The combined number of arrests made for sexual violence would indicate a steady decline by 28.5% from 2007 to 2017. However, breaking down the figure and examining the two sexual violence crime components reveals the two crimes have diverging arrest trends. Rape-related arrests were falling from 2011 – 2013 but began to rise post-2013. Conversely, sex offenses saw an uptick in arrests from 2001 – 2005 but have since been decreasing. The growth in rape-related arrests post-2013 and the drop in arrests for sex offenses in recent years is likely influenced by reporting agencies converting to the revised definition. Hence, arrests that previously qualified as a sex offense were reclassified as a rape offense.

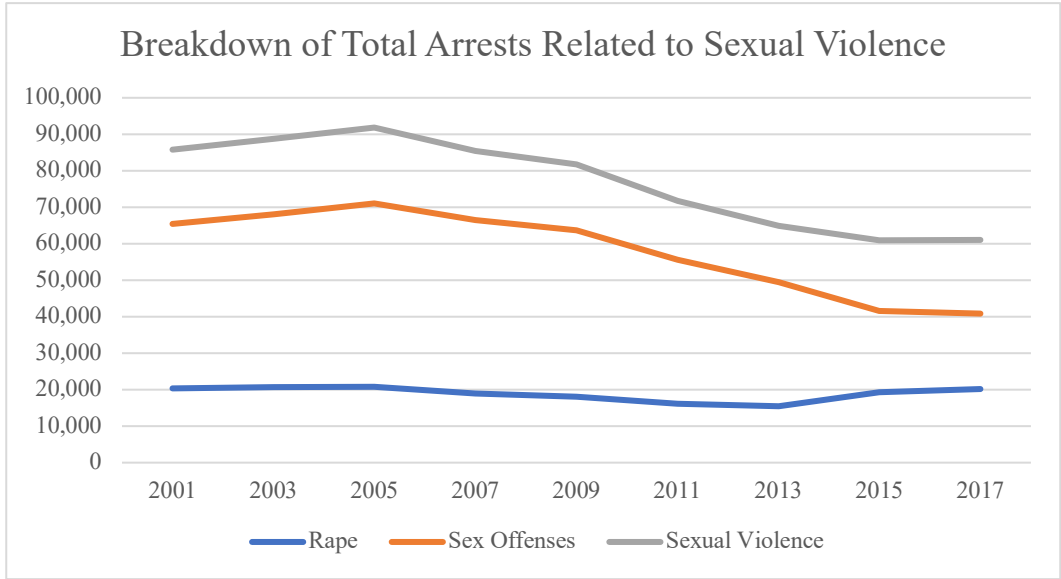


Figure 6. Breakdown of Total Arrests Related to Sexual Violence – Comparing Both Arrests Related to Sex Offenses and to Rape

Figure 7 portrays the arrest rates when compared to the total count of rape offense using the reported and estimated indicators. In other words, the figure compares what proportion of rape offenses resulted in an arrest that year in relation to the aggregated rape counts for each estimate and reported indicator. To highlight, 16,175 arrests were made for rape offenses in 2011, which accounted for 19.2% of the estimated count and 19.4% of the reported count. This means that a little over 19% of the total number of rape offenses committed in 2011 led to an arrest that year. From 2011 to 2013, there were 58.9% (estimated indicator) and 57.7% (reported indicator) drops in the percentage of arrests made for both indicators. While a 50% drop in the number of arrests being made in just two years would initially raise concerns, this does not mean the criminal justice system reduced its efforts to hold perpetrators accountable. Rather, this is a result of the increased aggregated totals of offenses committed for both indicators in 2013 (see Figure 2). The lower arrest rates post-2011 can be explained in part by the fact that the aggregated number of rape offenses for each indicator more than doubled in that timespan.

Therefore, the percentages are smaller to reflect the large growth of the denominator (aggregated totals) versus the smaller growth of the numerator (arrests made).

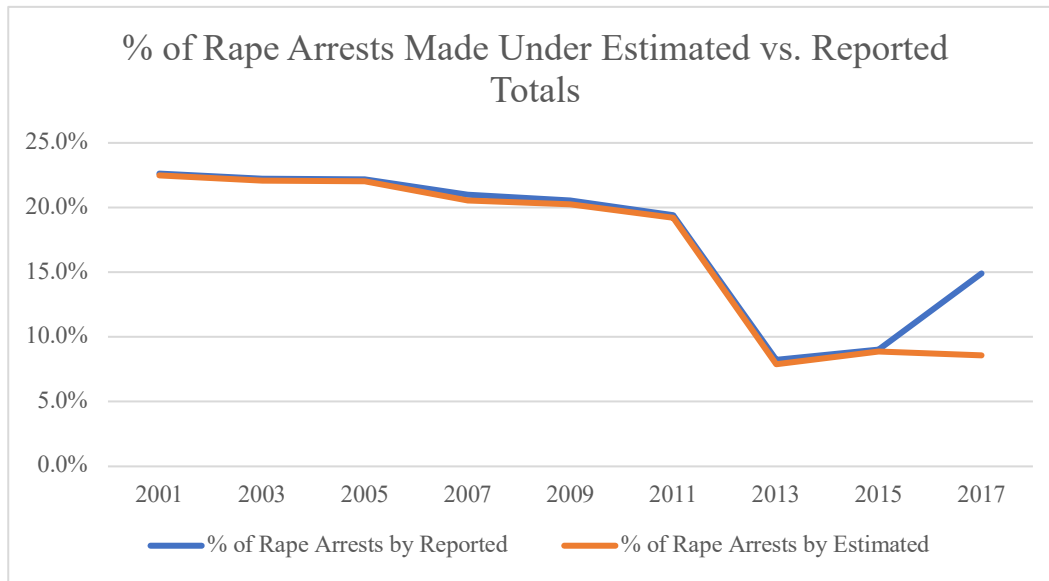


Figure 7. Proportion of Rape Offenses Committed that Led to an Arrest Under the Estimated vs. Reported Totals

Figure 8 compares the prevalence of rape in Canada², South Africa, Sweden, and the United States (see Table 4). Looking at the trends between 2011 – 2017, the four nations have been trending to converge closer to one another. Breaking down the results, South Africa, which had the highest percentage of women who agree it is acceptable for a husband to beat their wife under certain circumstances (refer to Table 3), began with the highest prevalence of rape out of the four countries represented. However, from 2011 – 2017, South Africa saw a 22.4% decline, the only nation that has this trend. Although Sweden had double the value in attitudes towards violence and almost five times greater reported lifetime prevalence rates than Canada, the two nations have very similar rates of rape crimes. Canada and Sweden had an average 0.375 range between their prevalence rates between 2011 – 2017. Prior to the FBI’s implementation of its

² Canada has no set laws that explicitly define rape, but rather three separate laws related to sexual assault that serves as an umbrella for various classes of sexual violence.

revised definition, the United States was 57.7% lower than the second lowest rate. However, by 2013, the United States' rate more closely matched Canada's and Sweden's, with a 3.5 range among the three nations that year. Since 2015, the nations have narrowed the range of their prevalence rates; Canada had the lowest at 67.0 per 100,000 and the United States had the highest at 72.3 per 100,000.

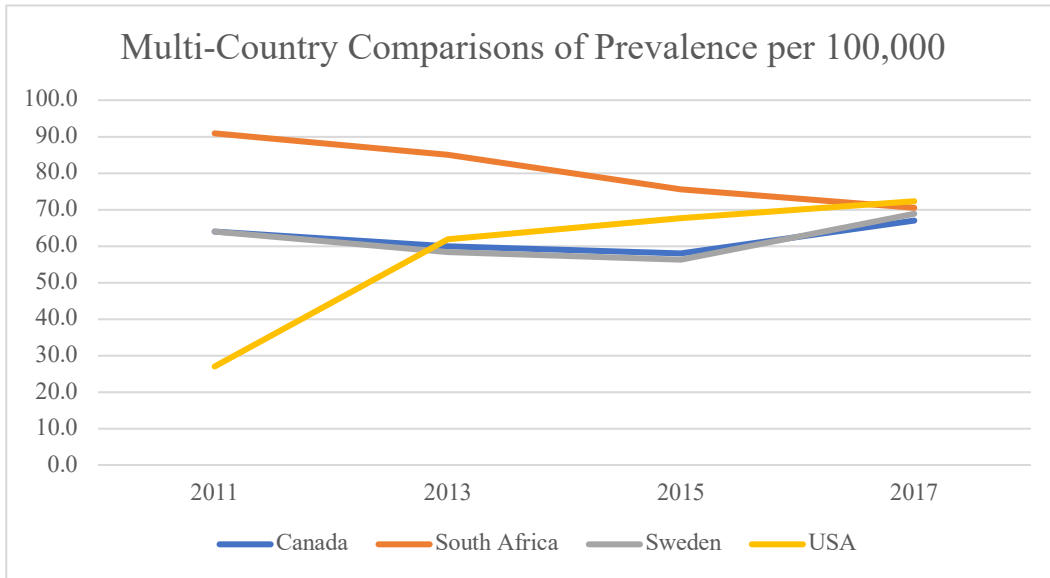


Figure 8. Country Comparison of Prevalence Of Rape

5.0 DISCUSSION

Historical data were evaluated for this analysis in order to identify trends and patterns related to rape offenses committed in the United States. The aggregated data were then compared with those from three other nations to provide national perspective and gain insight into other country trends.

Looking at the total number of rape offenses from the reported and estimated indicators, from 2011 to 2013, the total reported rape offenses and total estimated rape offenses jumped by 125.5% and 132.6%, respectively. In general, the rates for the two indicators were relatively similar throughout the years, with the estimated measurement narrowly outnumbering the reported indicator each year. However, this similarity ended in 2017 when the estimated value was 74.1% greater than the reported figure; the total number of reported rape offenses was 135,311 compared to the almost doubled, 235,611, total number of estimated rape offenses measure in 2017. This increase in the total number of estimated rape offenses, and not reported, is likely due to the FBI no longer counting offenses classified under the legacy definition.

From 2001 – 2011, total estimated rape offenses declined. However, between the years of 2011 and 2013, the prevalence of rape rose 129.3%, from 27.0 per 100,000 individuals to 61.9 per 100,000 individuals, and has been increasing in subsequent years, again, likely due to the FBI's revision of its rape definition. Expanding further, between 2013 to 2015, the rate grew by over 9% and between 2015 to 2017, that figure rose again by 6.8% to a record high of 72.3 per 100,000 individuals in 2017. Within ten years (2007 to 2017), the total estimated rape offenses in the United States saw an over 136% hike, and since the implementation of the FBI's definition for rape in 2013, that figure grew by 16.8% from 2011 to 2017.

Prior to 2017, the prevalence of total reported and estimated rape offenses per 100,000 individuals were relatively similar to one another. However, that ended in 2017 when the

prevalence of rape offenses by estimate far outpaced the prevalence of rape offenses by reported (72.3 per 100,000 vs. 41.6 per 100,000). The disparity in prevalence rates observed in 2017 is likely attributable to the FBI no longer including in its published total reported rape offenses indicator the numbers provided by law enforcement agencies still using the legacy definition.

Comparing the percentage of rape-related arrests to total arrests made, overall, rape arrests account for a small fraction of the total number of arrests made each year. For example, in 2017, there were over 8.9 million total arrests for all classes of crime, of which 20,162 were related to rape, accounting for just 0.23% of the total number of arrests made in 2017. This proportion has held steady and the figure has never risen above the 2017's measure in its history.

Expanding further, arrests related to sexual violence, which includes both sex offenses and rape, were on the decline from 2001 – 2017. The aggregated number of arrests related to sexual violence has steadily dropped across the years, decreasing by 28.5% from 2007 to 2017. To break this down, between 2007 – 2017, the total number of arrests related to sex offenses reduced by 38.5%. However, although the number of rape arrests was on the decline from 2001 – 2013, by about 24.3% during those years, the trend changed post-2013; the number of rape arrests rose by 24.9% in 2015 from 2013. This indicates an opposing trend: the number of arrests for rape has grown while the number of arrests for sex offenses has fallen. Although the prevalence of rape is increasing (see Figure 3), this is not to say more rape crimes are occurring, but is rather an indication of the effects of the FBI's revised definition on national reporting practices.

Exploring the arrest rate trends as a percentage of total arrests using the reported and estimated indicators provides insights into the disparity highlighted in Figure 7 for 2017. The percentage of those arrested by reported measure had a 14.4% range while the percentage of those arrested by estimate had a 17.6% range. In 2017, the percentage of those arrested for rape

offenses using the reported indicator was 73.3% higher than those arrested for rape using the estimated measure. This does not mean state law enforcement agencies are arresting more perpetrators, but rather reflect that the FBI no longer reports numbers under the legacy definition in the reported figure. As such, the reported totals were smaller than the estimated indicator because it was divided using a smaller crime total. In other words, the reported figure had a smaller denominator (total number of reported rape offenses) than the estimated calculation, which included crimes classified under both legacy and revised definitions.

This analysis involved a multi-country comparison of United States' prevalence of rape to data from three other nations in order to understand the U.S. figures in relation to other countries. It is important to note that these findings are only estimates and rape figures have historically been underreported in many nations. Thus, a nation's true prevalence rate is likely higher than the published data. In addition, due to the disparity between the prevalence of total reported rape offenses and total estimated rape offenses, only the prevalence for the total estimated rape offenses indicator was used for the multi-country comparison, as this measure better reflects the current trends in the United States. Respective to each country's total population, prevalence was calculated to standardize rates for each country in order to have a single unit of measurement for comparison.

In general, Canada, South Africa, Sweden, and the United States have had different prevalence rates. However, from 2011 – 2017, those figures were converging. In 2011, there was a 63.9 range among the nations, with 90.9 per 100,000 in South Africa and 27.0 per 100,000 in the United States. However, by 2017, that range narrowed to just 5.3, with 72.3 per 100,000 in the United States and 67.0 per 100,000 in Canada. While the United States has seen an increase in the prevalence of rape, South Africa has experienced an opposite trend. In Canada and Sweden, the trend was falling until post-2015, when prevalence trends reversed and began

growing. To elaborate, between 2011 – 2017, although South Africa has a 22.4% decline in the prevalence of rape, Canada, Sweden, and the United States all witnessed 4.7%, 7.8%, and 167.8% increases, respectively, in that same timespan. When examined more closely, from 2015 to 2017, those figures show a 15.5% rise in Canada, 6.6% drop in South Africa, 22.4% growth in Sweden, and 6.8% increase in the United States.

This uptick in 2013 for the United States reflects the FBI's revision of its definition of rape, which expanded reporting standards for rape offenses. The jump for the United States from 2011 to 2013 does not mean the U.S. had an upsurge of rapes occurring in 2013, but rather the result of the expanded scope provided by the revised definition. In addition, it is important to note that both Canada and Sweden, where rape was on the decline, saw upticks in prevalence post-2015. Lastly, while South Africa had had a long history of sexual violence against women, the nation's prevalence has been steadily declining since 2011 and did not experience the uptick that Canada and Sweden experienced. South Africa was the only nation of the four that witnessed a steadily and unchanging decline during the reporting period.

6.0 CONCLUSION

Rape has severe impacts on the victims. Beyond the personal injuries the victims sustain, whether they be psychological, physical, financial, or academic, the nations of these victims are also impacted. Because rape has a number of associated negative health outcomes post-trauma, and because of the sheer number of victims, it is a serious public health issue that extends beyond race, class, and international borders. The degree and prevalence of this violent crime carry potentially long-lasting consequences on the victim's life. In addition, the total overall costs of rape to the nation is immense and results in billions of dollars to the economy.

In the United States, the prevalence of rape has been on the rise over the past few years. In 2013, the FBI implemented its revised definition of rape to expand the scope of reportable offenses. Prior to the revision, the legacy definition was narrow, and the U.S. was seeing a downward trend of total aggregated rape offenses. However, post-implementation led to an upsurge in the total number of estimated rape offenses committed. This upward trend is likely attributable to the expanded definition, better reporting by law enforcement agencies, and continued conversions to the revised definition.

In the multi-country analysis, the national trends, except for South Africa, follow a growth in the prevalence of rape over the recent years. The recent trends in Sweden and Canada present an area of opportunity for further investigation. Whether due to better reporting practices or a true reflection of growing numbers of rape offenses, the findings show that rape is on the rise in three of the four nations analyzed.

Because rape is a major public health area of concern, national governments must have support services that encourages reporting and addresses the needs of victims and implement standardized reporting measures that more accurately reflect the frequency of the crime. National governments are encouraged to adopt improved educational campaigns targeted towards at-risk

groups (perpetrators and victims), have robust reporting standardization among criminal justice agencies, and better support services for victims. With these programs and changes in place, rape may decline, and rape victims can better seek necessary resources that will help them address the negative post-assault outcomes.

APPENDIX A: GLOBAL PREVALENCE OF VIOLENCE AGAINST WOMEN

Table 2. Global Prevalence of Rape by GBO Region and By Intimate Partner Violence and Non-Partner Violence for Women

Female, 2010 GBD Region	Prevalence	
	IPV	Non-IPV
Asia Pacific, High-Income	28.5	12.2
Asia Central	22.9	6.5
Asia, East	16.3	5.9
Asia, South	41.7	3.3
Asia, Southeast	28.0	5.3
Australasia	28.3	16.5
Caribbean	27.1	10.3
Europe, Central	27.8	10.8
Europe, Eastern	26.1	7.0
Europe, Western	19.3	11.5
Latin America, Andean	40.6	15.3
Latin America, Central	29.5	11.9
Latin America, Souther	23.7	5.9
Latin America, Tropical	27.4	7.7
North Africa/Middle East	35.4	4.5
North America, High-income	21.3	13.0
Oceania	35.3	14.9
Sub-Saharan Africa, Central	65.6	21.0
Sub-Saharan Africa, East	38.8	11.5
Sub-Saharan Africa, Southern	29.7	17.4
Sub-Saharan Africa, West	41.7	9.2
WORLD	30.0	7.2

APPENDIX B: VIOLENCE AGAINST WOMEN PERCENTAGES FOR ALL FOUR NATIONS

Table 3: Attitudes Towards and Prevalence of Sexual Violence in Canada, Sweden, South Africa, and United States

2014	Violence Against Women			
Subject	Canada	South Africa	Sweden	USA
Attitudes towards violence	6%	34%	12%	13%
Prevalence over lifetime	6%	13%	28%	36%

APPENDIX C: INDIVIDUAL STATE REPORTED ARRESTS AND TOTAL ESTIMATED RAPE OFFENSES COMMITTED

Table 4: State Reported Arrests Related to Rape and Sex Offenses and Total Estimated Rape Offense

	Reported Arrests					FBI Crime Estimates		
	2017 All Arrests	Rape Arrests	Sex Offenses Arrests	Number of Agencies	Estimated Population	Estimated Crimes	Estimated Rape Offenses	Estimated Population
ALABAMA	153,285	344	550	223	3,737,635	169,711	2,028	4,874,747
ALASKA	29,152	126	256	32	736,205	32,337	863	739,795
ARIZONA	277,698	339	1,289	91	6,400,872	240,159	3,581	7,016,270
ARKANSAS	123,971	238	92	264	2,760,388	109,160	2,053	3,004,279
CALIFORNIA	1,093,363	2,561	9,244	676	39,386,220	1,164,741	14,721	39,536,653
COLORADO	234,409	442	471	198	5,083,702	172,121	3,858	5,607,154
CONNECTICUT	100,211	190	368	105	3,538,025	71,689	837	3,588,184
DELAWARE	31,549	69	122	62	961,939	27,838	334	961,939
DISTRICT OF COLUMBIA	17,986	0	13	2	0	36,703	444	693,972
FLORIDA	713,085	1,873	3,001	605	20,971,216	612,845	7,940	20,984,400
GEORGIA	230,640	284	2,434	389	8,205,589	335,556	2,718	10,429,379
HAWAII	35,618	114	155	4	1,427,538	43,969	567	1,427,538
IDAHO	51,686	120	188	82	1,534,173	31,967	707	1,716,943
ILLINOIS	64,552	259	235	2	2,852,941	313,677	5,556	12,802,023
INDIANA	147,199	208	673	201	4,267,407	187,730	2,625	6,666,818
IOWA	94,485	192	125	190	2,686,879	76,085	1,234	3,145,711
KANSAS	61,144	112	167	225	1,900,556	93,623	1,627	2,913,123
KENTUCKY	219,872	212	292	330	4,329,947	104,889	1,661	4,454,189
LOUISIANA	166,867	391	841	170	3,747,239	183,804	1,867	4,684,333
MAINE	40,675	70	182	135	1,335,907	21,750	473	1,335,907
MARYLAND	165,877	352	578	139	5,488,907	164,769	1,691	6,052,177
MASSACHUSETTS	118,676	296	425	321	6,522,173	123,135	2,197	6,859,819
MICHIGAN	244,417	750	626	614	9,789,634	224,144	7,031	9,962,311
MINNESOTA	143,702	632	1,055	374	5,379,142	135,503	2,385	5,576,606
MISSISSIPPI	78,239	58	198	64	1,385,928	90,107	1,091	2,984,100
MISSOURI	228,042	551	1,242	361	5,626,134	205,673	2,729	6,113,532
MONTANA	30,824	47	102	100	1,037,591	31,186	613	1,050,493
NEBRASKA	5,708	12	28	54	233,437	49,536	1,191	1,920,076
NEVADA	112,004	321	695	51	2,680,733	94,989	1,890	2,998,039
NEW HAMPSHIRE	47,516	52	99	176	1,292,643	21,223	663	1,342,795
NEW JERSEY	281,631	333	916	490	8,521,517	160,690	1,505	9,005,644
NEW MEXICO	40,552	43	31	23	823,584	98,665	1,259	2,088,070
NEW YORK	259,257	970	1,662	510	10,121,830	371,354	6,324	19,849,399
NORTH CAROLINA	240,365	229	806	213	6,457,952	298,850	2,715	10,273,419
NORTH DAKOTA	39,944	61	120	106	749,938	18,727	399	755,393
OHIO	224,423	406	516	453	9,362,266	316,717	5,859	11,658,609
OKLAHOMA	106,731	179	458	389	3,789,847	131,000	2,142	3,930,864
OREGON	124,851	166	436	143	3,745,046	135,396	1,999	4,142,776
PENNSYLVANIA	372,570	1,171	2,211	1,383	12,552,431	251,340	4,201	12,805,537
RHODE ISLAND	22,707	77	76	41	943,094	21,021	445	1,059,639
SOUTH CAROLINA	153,573	378	295	346	3,920,047	186,007	2,504	5,024,369
SOUTH DAKOTA	63,625	79	92	75	729,800	20,088	595	869,666
TENNESSEE	350,912	351	621	449	6,505,139	241,243	2,934	6,715,984
TEXAS	745,719	2,247	2,804	909	25,980,682	849,566	14,470	28,304,596
UTAH	104,741	204	656	114	2,646,000	93,648	1,697	3,101,833
VERMONT	13,969	62	41	72	600,391	9,994	218	623,657
VIRGINIA	258,878	430	653	373	7,782,044	169,487	2,862	8,470,020
WASHINGTON	173,344	515	587	222	6,678,694	257,575	3,255	7,405,743
WEST VIRGINIA	39,296	103	88	178	1,150,294	39,998	795	1,815,857
WISCONSIN	252,142	900	1,928	427	5,700,831	123,341	2,139	5,795,483
WYOMING	27,914	43	107	53	543,983	11,980	263	579,315
TOTALS	8,959,596	20,162	40,850	13,209	274,606,110	8,977,306	135,755	325,719,178

APPENDIX D: PREVALENCE OF RAPE PER 100,000 INDIVIDUALS – MULTI-COUNTRY COMPARISON

Table 5: Prevalence of Rape in Canada, South Africa, Sweden, and United States

Prevalence	2011	2013	2015	2017
Canada	64.0	60.0	58.0	67.0
South Africa	90.9	85.1	75.5	70.5
Sweden	63.9	58.4	56.3	68.9
USA	27.0	61.9	67.7	72.3

APPENDIX E: FIGURES FOR UNITED STATES RAPE INDICATORS

Table 6: Arrests Figures Related to Sexual Violence From 2001 to 2017

			2001	2003	2005	2007	2009	2011	2013	2015	2017
Arrests Reported to FBI	Under 18	Total all classes	1,685,675	1,687,614	1,702,150	1,770,167	1,621,391	1,211,699	947,566	771,481	689,843
		Rape	3,456	3,294	3,178	2,887	2,575	2,272	2,384	3,003	3,293
		Sex Offenses	12,879	13,303	12,638	11,976	10,866	9,802	8,573	6,902	6,893
	Over 18	Total all classes	8,255,354	8,889,380	9,722,721	10,054,538	10,169,583	9,244,778	9,026,561	8,307,394	8,269,753
		Rape	16,977	17,429	17,613	16,038	15,509	13,903	13,075	16,301	16,869
		Sex Offenses	52,538	54,677	58,413	54,486	52,856	45,829	40,922	34,734	33,957
	Total All Ages	Total all classes	9,941,029	10,576,994	11,424,871	11,824,705	11,790,974	10,456,477	9,974,127	9,078,875	8,959,596
		Rape	20,433	20,723	20,791	18,925	18,084	16,175	15,459	19,304	20,162
		Sex Offenses	65,417	67,980	71,051	66,462	63,722	55,631	49,495	41,636	40,850
		Sexual Violence	85,850	88,703	91,842	85,387	81,806	71,806	64,954	60,940	61,012
		Number of Agencies	10,033	11,440	11,576	12,528	12,964	12,640	12,565	13,379	13,209
		Estimated Reporting Population	208,957,345	221,660,971	235,480,941	243,726,512	258,354,142	257,457,661	265,229,312	267,169,858	274,606,110

Table 7: Total Estimated Rape Offenses From 2001 to 2017

			2001	2003	2005	2007	2009	2011	2013	2015	2017
Total estimated rape offenses	By-Volume	Rape (Revised)							113,695	126,134	135,755
		Rape per 100,000							35.9	39.3	41.7
		Rape (Legacy)	90,863	93,883	94,347	92,160	89,241	84,175	82,109	91,261	99,856
		Rape per 100,000	31.8	32.3	31.8	30.6	29.1	27.0	25.9	28.4	30.7
		Rape Total	90,863	93,883	94,347	92,160	89,241	84,175	195,804	217,395	235,611
		Population	285,317,559	290,788,976	296,507,061	301,621,157	307,006,550	311,587,816	316,497,531	320,896,618	325,719,178

Table 8: Total Reported Rape Offenses From 2001 to 2017

			2001	2003	2005	2007	2009	2011	2013	2015	2017
Total estimated rape offenses	By-State	Rape (Revised)							108,217	123,553	135,311
		Rape (Legacy)	90,303	93,159	93,768	90,235	87,947	83,252	79,494	89,819	
		Rape Total	90,303	93,159	93,768	90,235	87,947	83,252	187,711	213,372	135,311
		Total Crime	11,804,921	11,775,044	11,522,689	11,214,590	10,602,842	10,229,672	9,785,011	9,185,231	8,940,603
		Estimated Population	284,225,065	290,246,393	295,859,883	301,032,865	306,406,893	310,973,921	315,482,390	320,746,592	325,025,206

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