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**Exploratory Research on the Impact of the Growing Oil Industry in North Dakota and
Montana on Domestic Violence, Dating Violence, Sexual Assault, and Stalking:
A Final Summary Overview**

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Abstract:

Objectives: The goal of this study was to examine the impact of increased oil development on domestic violence, dating violence, sexual assault, and stalking (DVDVSAS) in the Bakken region of Montana and North Dakota. To understand the impact of any increased interpersonal violence, or perceptions of an increase, from 2002-2014, a mixed-methods approach was used that combined the analysis of quantitative and qualitative data. Specifically, the investigators collected and analyzed existing data on related crimes, data from state and local agencies that provide services to victims of interpersonal violence, audio-recorded interviews and focus groups with a wide variety of individuals in the region, and relevant public policies.

Results: Statistical findings validate the perceptions of general human service workers, criminal justice personnel, as well as victim service and health care providers that DVDVSAS increased in the Bakken region after the oil boom started in 2008. However, findings vary somewhat depending upon the types of data that were analyzed and the specific communities examined. While nearly all of the regional analyses revealed increases in DVDVSAS, some of those changes were not statistically significant (although they may have had a substantial impact on agency operations in terms of workload, especially given the remote and rural nature of the areas examined). Hot spots from data sources were also noted. One of the most important conclusions is that the oil patch is a diverse setting: not all communities in the Bakken region had the same experiences, and some were more affected than others. Additionally, qualitative findings provide a richer narrative regarding the nature and context of the impact of oil development on survivors, service providers, and communities. Respondents reported experiencing increased demand for services without adequate resources to address client needs. These complexities cannot be captured by the quantitative data alone.

Purpose:

Investigators from the University of North Dakota explored changes in domestic violence, dating violence, sexual assault, and stalking (DVDVSAS) in 12 Montana (MT) and 21 North Dakota (ND) counties affected by oil extraction activities occurring between 2002 and 2014, including among the Mandan, Hidatsa, and Arikara (MHA) Nation, Fort Peck Assiniboine and Sioux Tribes, and Turtle Mountain Band of Chippewa in Trenton, ND (an Indian Service Area). Specifically, the researchers sought to answer: 1) Have incidents of DVDVSAS increased since the oil boom? 2) Are any observed changes commensurate with population growth? 3) Are any changes unique to oil-impacted communities? 4) Can maps depict the relationship between crime hot spots and changing population demographics? 5) What are the characteristics of victims and offenders and the nature of victims' experiences? 6) How has oil development impacted perceptions of DVDVSAS among victims, criminal justice personnel, direct victim service providers, health care providers, general human service providers, tribal community members, oil industry personnel, and community members? 7) What is the effectiveness of legal (criminal and civil justice), oil industry, and health/human service delivery policies and procedures? To answer these questions, the researchers analyzed quantitative data from official reports and victim service agencies; conducted interviews and focus groups with community members, stakeholders, and general human service and criminal justice personnel; and examined relevant public policies.

Project Subjects, Design, and Methods:

A mixed-methods approach was used that combined analysis of quantitative and qualitative data. With respect to the quantitative data, population demographics were retrieved from the US Census (2000-2014). Data on registered sex offenders (RSOs) were obtained from

the North Dakota Attorney General (2010-2015) and Montana Department of Justice (2008-2014), while data on DVDVSAS came from the following sources: Uniform Crime Report (UCR) summary statistics on rape (2002-2014); National Incident-Based Reporting System (NIBRS) victim level data on domestic violence, dating violence, sexual assault, and intimidation/stalking (2002-2014); ND Council on Abused Women's Services (ND CAWS) statistics on the number of domestic violence and sexual assault victims served by their programs (2001-2014); and Automated Victims' Information Database (AVID) information maintained by the Montana Board of Crime Control (MBCC) on the number of clients with primary victimizations classified as domestic violence or partner/family member assault, sexual assaults, and stalking served by various funded programs (2010-2015). The UCR and NIBRS also provided information on populations served by specific law enforcement agencies, which were used for rate computations.

Qualitative data were collected through semi-structured individual interviews and focus groups with community members and stakeholders. Participant groups were chosen based on a preliminary study, as well as using purposeful, snowball sampling methods. A total of 119 individual interviews were conducted and an additional 66 individuals participated in 13 focus groups (ranging in size from 2-17 participants), for a total of 185 participants. Individual interviews were categorized into seven groups, presented in Table 1. Altogether, 51 (27.6%) of the participants were interviewed in tribal communities, with about 39 (21.1%) of the study participants affiliated with a tribe in the region. Public policies related to interpersonal violence were also identified.

Table 1. Respondent categories

	Interview participants	Focus group participants	Tribal members
General human service providers	24	8	2
Legal & criminal justice personnel	31	9	8
Health care providers	10	0	2
Oil industry personnel/family members	9	3	2
General community members	19	24	15
Direct victim service providers	16	22	10
Victims	10	0	0

Analytic Plan:

Quantitative data were analyzed using SPSS statistical analysis software. Crime and victimization data were analyzed at the agency or program level, reflecting annual caseloads; data on population demographics from the Census and on RSOs were analyzed at the county level. Repeated-measures t-tests were conducted to determine if there were any statistically significant differences in the average number of victimizations reported, or clients served, prior to the oil boom compared to after the oil boom was underway. Changes in rates of victimizations were examined to control for population size. Similar analyses were conducted for agencies or programs outside of the Bakken region in order to determine if any changes in DVDVSAS were unique to oil-impacted communities. Quantitative data were also analyzed using ArcGIS to help visualize demographic patterns. Interviews and focus groups were digitally recorded and transcribed. All identifiers (such as respondent names and specific locations) were removed from the transcripts to protect confidentiality. Qualitative data were then analyzed using NVivo software. This process involved reading and “coding” the interviews by identifying reoccurring themes and noting sources of variation between different contributors. Summaries were prepared based on these identified themes. In addition, a victim-based policy analysis was conducted. The primary research questions are answered below.

Key Findings:

Q1: Have incidents of DVDVSAS increased since the oil boom?

Regional changes in the number of some types of victimizations were observed. All of these changes reflected increases, but the magnitude of those increases varied depending on the types of data analyzed and the specific communities examined. A modest but significant increase in average annual numbers of sexual assault victims served across ND CAWS programs in North Dakota's Bakken region from 2002-2007 to 2009-2014 was noted. There were also significant increases in NIBRS-reported domestic violence, dating violence, and an overall DVDVSAS composite from 2004-2007 to 2009-2014. Non-significant increases were found in the UCR (2004-2007 to 2009-2012) and NIBRS data for sexual assaults, and NIBRS data for intimidation. The increase in ND CAWS reported domestic violence was not significant ($p = .051$) – but involved the largest number of average additional victims and likely had operational impacts for human service workers and local communities. Data from victim service agencies in Montana were only available for 2010 onward so a pre/post-test design could not be used to analyze them.

Other analyses revealed the presence of a number of hot spots within the oil-impacted counties – locations that experienced especially striking changes after 2008.¹ For example, ND CAWS data showed that change in the average annual number of new domestic violence victims from 2002-2007 to 2009-2014 was highest in hub cities and/or near the epicenter of the oil boom (e.g., Dickinson, Minot, Williston, and Stanley, ND). Among those law enforcement agencies with the most change in NIBRS for DVDVSAS from 2004-2007 to 2009-2014 were the police departments of Mandan, Williston, and Watford City; the sheriff's offices for McKenzie, McLean, Ward, and Williams Counties in North Dakota; and the Sheridan County sheriff's

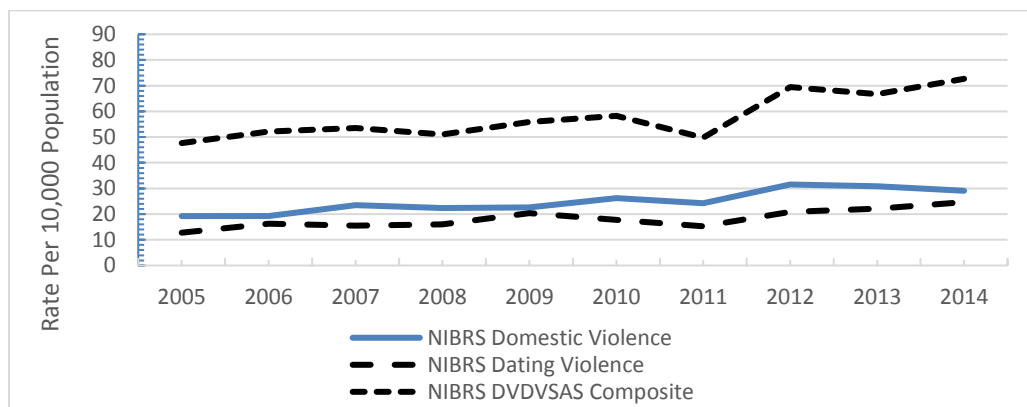
¹ Because of missing data, not all agencies and programs were included in analyses; these agencies and programs may have also experienced increased DVDVSAS workloads associated with the oil boom.

office in Montana.

Q2: Are changes in DVDVSAS commensurate with population growth?

Increased social problems associated with oil booms are often presumed proportionate to the increased population. Examining rates allows us to control for population size and test this assertion. If rates increase, then the rise in crime/victimization cannot be explained only by higher populations. Rates were not calculated for victim service agencies because the populations they serve are not easily defined as their catchment areas do not consistently follow civic or county borders. Law enforcement agencies, on the other hand, cover specific jurisdictions. Findings from these analyses were somewhat mixed, but there were statistically significant rate increases for NIBRS-reported domestic violence, dating violence, and overall DVDVSAS. Those were the same NIBRS offenses for which raw numbers increased – meaning that, accounting for higher numbers of residents in communities, there were still more of these types of victimizations occurring after the boom started in 2008 (see Figure 1).²

Figure 1. Average rate per 10,000 population for NIBRS domestic violence, dating violence, and overall DVDVSAS victims in the Bakken region of ND and MT for agencies with data from 2005-2014 (n=16)



² Trends depicted in Figure 1 are for agencies with complete data from 2005-2014 (n=16) whereas NIBRS pre/post analyses allowed for up to one year of missing data from each time period to increase the sample size (n=20).

Q3: Are changes in DVDVSAS unique to oil-impacted communities?

Identical sets of analyses (to those carried out in Q1 and Q2) were conducted for agencies and programs outside the Bakken region. Only three changes were statistically significant in the non-Bakken region: increased average annual numbers of NIBRS-reported dating violence victims, decreased average annual rates of NIBRS-reported domestic violence, and decreased average annual rates of NIBRS-reported overall DVDVSAS from 2004-2007 to 2009-2014. Thus, unique to the Bakken region were significantly elevated numbers of domestic violence victims known to law enforcement, overall DVDVSAS victims known to law enforcement, and sexual assault victims served by ND CAWS programs. In addition, only the Bakken region had certain officially reported offenses that significantly outpaced population growth.

Q4: Can maps depict the relationship between crime hot spots and population demographics?

Mapping software was used to visually depict population changes, including the counties with the biggest changes in number of RSOs (see Figures 2 and 3). The results of these analyses also showed that some of the largest population increases from 2000 to 2014 occurred in the Bakken region, and in particular, in Williams and McKenzie counties in ND. The increase in the proportion of males in the Bakken region is especially notable (see Figure 4). Demographic changes are generally consistent with the patterns of changes in DVDVSAS that were observed.

Figure 2. Montana difference in RSOs from January 2008 to October 2014

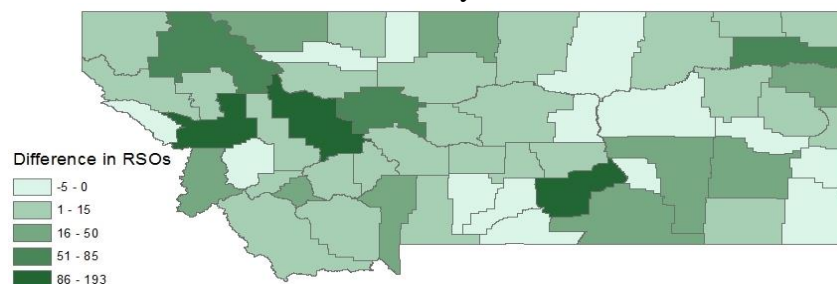


Figure 3. North Dakota difference in RSOs from October 2010 to October 2014

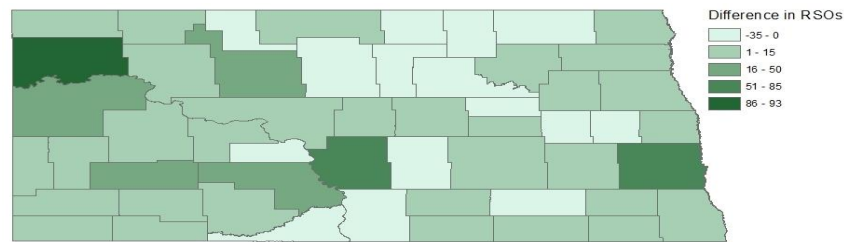
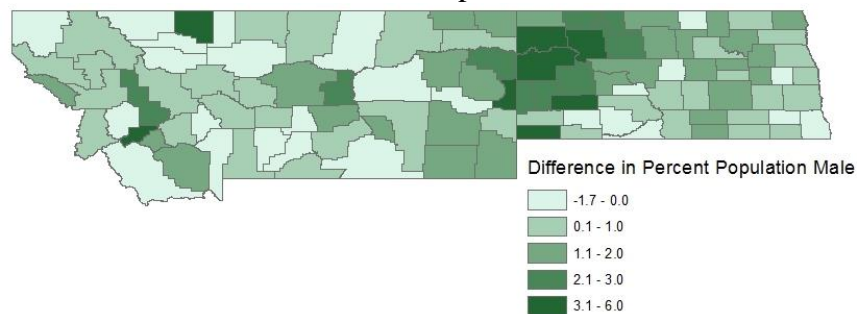


Figure 4. North Dakota and Montana difference in percent male from 2000 to 2014



Q5: What are the characteristics of victims and offenders and the nature of victims' experiences in oil-impacted communities?

The richest and most comprehensive findings related to changes in the characteristics of victims and offenders were found in the qualitative data. Analyses of the qualitative data revealed the following reoccurring themes among service providers and criminal justice professionals, who consistently reported more cases of domestic violence and sexual assault:

- Most new clients from out of state and country; some had limited English skills.
- Many clients/families were not recognizable; little known about their histories.
- More diversity in the relationships between victims and offenders.
- More cases of child abuse and neglect.
- More cases where perpetrators were less well known (i.e., new relationships).
- Wider range of cases, types of violence not seen before, and more severe violence.
- Drugs and alcohol often a contributing factor in occurrence and severity of violence.

- More men who are victims (but still a very small proportion of overall cases).
- More transient victims/perpetrators; many victims from out of state return home.
- Greater social and geographic isolation of families and victims.
- More victims experiencing homelessness or temporary and/or inadequate housing.
- Oil wages of men and lack of childcare for women reinforce financial dependency.
- More victims with multiple victimizations and perpetrators with previous convictions.
- More clients with addiction and mental health disorders.

Q6: How has the oil boom impacted perceptions of DVDVSAS for victims, criminal justice personnel, direct victim service providers, health care providers, general human service providers, tribal community members, oil industry personnel, and community members?

The following themes were consistently described across all categories of respondents:

- The scarcity of affordable housing contributed to crowded and desperate living arrangements, which caused tension and conflict in homes; victim service providers had difficulties finding housing for survivors, crisis shelter shortages were noted.
- Oilfield work often requires long shifts and working several weeks in a row, followed by time off; many workers did not move their families to the Bakken region, so the separation of families impacted workers, their partners, and communities.
- The increased availability of illicit drugs in the Bakken region was noteworthy and contributed to substance use – a major factor increasing survivor vulnerability and the severity of abuse; a lack of resources to treat addictive disorders was also noted.
- Service providers were confronted with more volatile clients and higher safety risks; workplace stress and secondary trauma increased; more time spent transporting clients to services in surrounding communities, and little time for training or respite.

- Participants reported that a lack of human and physical resources and funding prevented agency staff from meeting client needs.
- Excessive demands on human services and criminal justice systems led to delays in providing and securing services for victims and perpetrators, especially behavioral health services; the public education sector struggled to meet the needs of more children exposed to domestic violence; also few batterer's treatment programs exist.
- Competition with oil industry salaries and a lack of affordable housing and childcare makes it difficult to recruit and retain human service and criminal justice personnel.
- Perceptions of safety were shaped by stories/rumors, news reports, social media, and first-hand experiences.
- Slowdown in oil production relieved some pressure on service providers, but demand for services persists as economic hardship increases family conflict.

Q7: What is the effectiveness of the legal, oil industry, and health/human service delivery policies and procedures related to interpersonal violence in oil-impacted communities?

From our interviews we found that workplace policies of area oil companies address employee drug screening and zero tolerance for workplace violence. However, they do not appear to specifically address family violence. Some interview and focus group participants described how employees sometimes feared they could be fired and survivors could be forced to leave their company housing if police are called.

While the 2013 Violence Against Women Act (VAWA) Reauthorization expanded housing protections for survivors in public housing, these protections do not apply to private housing. The demand for public and Section 8 housing in the Bakken region exceeded available resources. VAWA Reauthorization also expanded the capacity of tribal nations to prosecute

persons suspected of domestic violence and sexual assault offenses. As these legislative changes were implemented after the study started, we were unable to assess their impact.

Implications for Criminal Justice Policy and Practice in the United States:

In conclusion, the oil boom that started in 2008 was accompanied by changes in DVDVSAS that increased the workloads of service providers – with communities near the epicenter among the most impacted. However, there were sometimes barriers to the collection and reporting of DVDVSAS data by victim service providers and criminal justice personnel. The findings indicate that qualitative data provide important contextual information for interpreting existing quantitative data. Mixed-methods research is advised.

Oil extraction has slowed since the initial phase of data collection in 2014 due to falling oil prices. The slowdown began in late 2014 and has given agencies some respite, but economic uncertainty also creates new sources of strain for families. The qualitative data gathered in the summer of 2015 provides insight into the impacts of the slowdown. Effort should be made to monitor how a prolonged slowdown might impact DVDVSAS in the Bakken region. In addition, it is anticipated that changes in commodity prices, local oil industry practices, and the global oil market may result in another boom; a common cyclical pattern in the energy extraction industry. The current study sheds light on the dynamics of an oil boom and the challenges associated with rapid resource development which may provide government officials with insight into strategies to minimize the worst impacts of the boom. Thus, before oil activity increases again, federal, state, and local leaders and funders should address the need for more affordable housing and adequate childcare, support those who provide services to victims and perpetrators (including expanding the workforce), increase funding and access to all behavioral health treatment services, and support community efforts to implement the 2013 VAWA Reauthorization.